ACCOUNTING
THEORY AND PRACTICE

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To My Co-laborers

WHOSE INTEREST IN ACCOUNTANCY EDUCATION AND WHOSE DEVOTION TO THE FUTURE WELFARE OF THEIR PROFESSION HAVE MADE THIS VOLUME POSSIBLE

PREFACE

The present volume completes the series of texts covering the general field of accounting which the author planned at the time of the appearance of his first volume. The special subjects of cost accounting and auditing, although essential links in the training for professional accounting, have not been given a place in this series, which is limited to the general field. Volumes I and II present the fundamental principles on which the science rests and give a thorough treatment of its larger problems, particularly those closely related to the fields of finance, business organization and management, and law. As the author views the problem of accountancy education, there remains for sound training in this general field, a need for the student to see how the principles which he has been studying as related to ideal abstract situations, are applied to actual conditions.

Business organizations may be divided into several large groups or types, the chief of which are: (1) financial institutions, (2) manufacturing businesses, (3) trading businesses, (4) those dealing in or concerned with services, professional and other, and (5) the organizations for carrying on the business functions of governmental bodies, state, county, municipal, etc. For the proper rounding out of his training in accounting, the student needs an understanding of the application of general accounting principles, not only to these main groups or types of business, but at least to a few of the individual units comprising each type.

Throughout the volumes of the series the view has been emphasized that merely theoretic principles held in abstraction and not submitted to the testing of use in practice have little or no place in the scheme of education for a calling as intensely practical as accounting. The major purpose of the present volume is

the study of accounting principles as definitely applied in various businesses. The student who has not had training in such study is often in danger of being narrow, arbitrary, and unyielding in his views of the function of accounting and of methods of keeping the records of business. He too often does not realize that a so-called principle is valueless unless it works in practice. Only by viewing principles and laws at work in different situations and under varying conditions can he have a really comprehensive grasp of those principles. Only by being familiar with their applications to given situations can he apply them with confidence to new conditions. A knowledge of the adaptations of fundamental accounting principles to meet certain practical requirements is an essential part of the education for the practice of accountancy.

In no sense is the present volume a "system" book, no effort being made to set forth a complete system of accounting for any business. Forms are used only where necessary to show the way in which basic principles are applied and results accomplished. Only the main accounting problems are treated in each case. Each chapter, however, is so developed as to give the student a sufficient background to grasp the accounting features of the business and to appreciate its main management and administrative problems, as an aid in the solution of which, after all, any system of records must justify itself.

This volume would not have been possible without the collective effort of many individuals. Aside from the intrinsic value of the various chapters, there is an additional value in a co-operative undertaking of this kind, in that the reader is brought in intimate contact with the diverse views of many able writers. After a two years' grounding in principles, the student should be able to examine and judge for himself the mooted points of accounting theory.

For use in the classroom, the book is designed along the same lines as the other volumes in the series. The practice work for the student is found in Appendices A and B. Appendix A con-

tains problems directly related to the chapters of the text. Appendix B presents a miscellaneous collection of accounting problems which have been set at various professional examinations. Sufficient material is provided to cover a full year's work of at least thirty weeks.

In the production of the present volume, my own work has been largely of an editorial nature in suggesting the broad lines for the development of the various chapters and of the accompanying problem material. Without a group of collaborators who were willing to give hearty co-operation in shaping their material to fit the general scheme, the work would have been well-nigh impossible.

In the preparation of the three chapters credited to myself I am under obligation for much assistance. John Jaffe, John Abney, and Henry W. Sweeney, graduate students, gathered most of the material, and Mr. Jaffe has given valuable assistance in the preparation of the problem material, in editorial suggestions, and in reading the proof. For courtesies extended, acknowledgment is due the Williamsburg and the Emigrant Savings banks. Acknowledgment is also due to "Flinty Green," the author of a master's thesis on coffee, from which I have drawn freely through the courtesy of my friend Professor John T. Madden of New York University. Charles F. Rittenhouse and Mr. Leo Greendlinger have kindly allowed the use of problems published by them. I am under particular obligation to Mr. Ernest B. Horwath of Horwath and Horwath, specialists in hotel accounting, for many suggestions and much material furnished by him. For the editorial work on the volume, acknowledgment should be made of the able assistance of Mr. Eskholme Wade.

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Accounting—Theory and Practice

CHAPTER I

ORGANIZATION FOR ACCOUNTING CONTROL

By James O. McKinsey

Need for Accounting Organization

The management of a business necessitates the making of plans, the formulation of judgments, and the issuing of instructions. To be trustworthy these plans, judgments, and instructions must be based on accurate and comprehensive information, and this information must be obtained in large part from the accounting and statistical records. Not only must such records be kept, but the information they contain must be analyzed, presented, and interpreted, if proper judgments are to be made and proper action taken. To this end, an organization must be set up and made responsible for its accomplishment.

It is the purpose of this chapter to discuss the nature of this organization and the method by which it performs its task. It should, however, be understood that though functions and duties may be the same in similar businesses—and some accounting functions are common to all businesses—the plan of organization whereby the functions are carried out may and generally does vary in its details, due in part to variations in custom and in part to variations in conditions. Therefore, the apportionment of duties among officials as here to be outlined is merely tentative and suggestive.

The Accounting Organization

The accounting organization in any particular business must depend to a considerable extent upon the size of the concern and

the nature of its operations. In a large business there may be a controller who in addition to exercising final control of accounting matters is one of the chief executives and acts in an advisory capacity to the other executives. In some businesses the treasurer supervises the accounting department through his exercise of general financial control. The modern tendency is to have a separately organized accounting department with a responsible executive head, though this executive may report to the controller or treasurer instead of to the president or general manager. The existence of a separate department will be assumed in this discussion. In the latter part of the chapter the duties of a controller and his relation to the accounting department will be explained.

The General Auditor

The executive head of the accounting department is known by various names. He may be called "general accountant," "plant accountant," "general auditor," or by some other similar title. Sometimes an assistant controller exercises this function. The terminology of accounting is not exact, and the titles used to designate those employed in accounting work are not standardized. In the present discussion the term "general auditor" will be used to refer to the accounting executive who is responsible for the proper keeping of the accounting records and the preparation of the necessary financial and statistical reports.

Duties of the General Auditor

It is the duty of the general auditor to see that the information necessary for the management of the business is available. To perform this task the general auditor, acting in co-operation with and under the direction of the controller, must prepare the following:

1. The reports desired by the executive officers, the preparation of which is one of the general auditor's most important tasks.

2. A classification of accounts which will provide for a proper analysis and classification of the information to be presented by means of reports to the executives. Without such a classification, the collection of accurate and systematized data is impossible.
3. A system of records to serve as posting mediums to the accounts. Without such records it is impossible to collect and summarize effectively the information in the accounts.
4. Standard journal voucher forms to serve as a means of summarizing details and of transferring these details from the original to the summarized record.

The preparation of such reports, accounts, records, and vouchers involves the entire accounting procedure—from the beginning of a transaction until its final effect on the financial condition of the business is shown in a report.

Internal Organization

It is customary for the general auditor to organize the accounting department in sections, to each of which he delegates a certain part of the work under his jurisdiction. Typical sections for the accounting department of a manufacturing business with sales branches are the following:

1. General Office Accounting Section
2. Branch Accounting Section
3. Cost Accounting Section
4. Tabulating Section
5. Sales Classification and Analysis Section
6. Pay-Roll Section
7. Accounts Payable Section
8. Accounts Receivable Section
9. Billing Section

The duties of each of these sections will be explained briefly.

1. General Office Accounting Section

The general office accounting section makes, for control purposes, a summarized record of the information collected and used by all the other sections. It is the central control section into which flow in condensed and classified form the figures recorded by the other sections in detail. This section has control of the following:

1. The general ledger containing the accounts of the general office and controlling accounts for each branch or division of the company.
2. The books of record which serve as posting mediums to the general ledger.
3. The preparation of vouchers for all charges by the general office to the branches or other units. These charges may be for interest on investment in the branch, for the branch's share of the overhead expenses of the general office, and for similar items.
4. The preparation of the periodical financial statements.

2. Branch Accounting Section

The branch accounting section is the intermediary between the accounting department of the general office and the branches. It has control of the following:

1. The accounting records of each branch kept at the general office. The extent of these records depends upon the method of handling the branch accounts.
2. The preparation of summarized reports to the general accounting section from which the latter makes the entries to its branch controlling accounts.
3. The preparation of the financial reports for the branches, assuming that the branch ledgers are maintained at the general office; otherwise there is no necessity for a branch accounting section.

3. Cost Accounting Section

The cost accounting or "works accounting" section is responsible for all records relating to the operations of the factory. The factory ledger is controlled by a Factory Ledger account on the general office ledger. This section has control of the following:

1. The factory ledger containing all the accounts relating to factory operations.
2. The records of original entry which serve as posting mediums to the factory ledger.
3. The detail cost sheets showing the costs of individual orders.
4. The preparation of the monthly journal vouchers which summarize the operations for the use of the general office accounting section.
5. The preparation of the periodical expense analysis showing the expenses of each of the production departments.

4. Tabulating Section

If tabulating machines are used in the compilation of accounting and statistical data, it is customary to establish a separate section of the accounting department to handle this work. This section has control of the following:

1. The tabulating of sales invoices and purchase invoices to show any classification desired for control purposes.
2. The tabulating of material issue tickets or requisitions and labor tickets to show the classification desired for entry in the cost records.
3. The preparation of reports showing the results of the tabulations performed in (1) and (2).

5. Sales Classification and Analysis Section

If a business maintains an extensive classification of sales with a corresponding classification of the cost of sales, it is desirable for a separate section of the accounting department to be

responsible for indicating the classification of each item on the sales invoice. If the invoices are used as a basis of costing the sales, this section will be responsible for showing the cost of sales and the cost classification on the invoice.

6. The Pay-Roll Section

The pay-roll section has control of the following:

1. Pricing and extensions of all labor tickets.
2. Preparation of pay-roll for use of the cashier in paying employees.
3. Preparation of reports to accounts payable section as a basis of entry to the voucher record. If a tabulating section is maintained, this information may be provided by it.

7. Accounts Payable Section

The accounts payable section has control of the following:

1. The vouchering of all invoices.
2. The maintenance of the vouchers payable record which shows the voucher distribution.
3. The preparation of checks in payment of the vouchers, to receive the signature of the treasurer.
4. The maintenance of paid and unpaid voucher files.
5. The preparation of the record of cash disbursements.
6. The preparation of the journal vouchers which summarize the voucher distribution for the use of the general office accounting section.

8. Accounts Receivable Section

The accounts receivable section has control of the following:

1. The accounts receivable ledger showing the accounts of the customers of the general office. If the accounts receivable of the branches are collected by the general

office, the accounts receivable section will maintain an accounts receivable ledger for each branch.

2. The preparation of monthly statements to be sent to the customers and for the use of the credit department.

9. Billing Section

The billing section has control of the following:

1. The extension of all orders received from customers. If a separate pricing section is not maintained, the billing section will be required to enter the price on the order as well as make the extensions.
2. The preparation of all invoices sent to customers or to branches.

It is not intended that the foregoing statement of the duties of the various sections be regarded as in any way final. Every business must organize its accounting department to fit its particular needs, hence the discussion here is suggestive only. The duties performed by the various sections are closely related, and many of them can easily be shifted from one to the other.

The Interrelations of Sections

To make up their records, some sections need information from others. For instance, the general office accounting section must receive information from the branch, cost, tabulating, billing, and accounts sections; the cost accounting section must receive information from the tabulating, accounts payable, and pay-roll sections to make its records of original entry. To transfer this information in summarized and classified form journal vouchers, as shown in Form 1, may be used.

Vouchers of uniform size and ruling and numbered consecutively are used for the transfer of information between all accounting sections, and a number should be assigned for each type of information. If the section responsible for the preparation of each voucher is determined and a date is set for its completion

and transmission, such a schedule enables a check to be exercised on the activities of each section. Unless such a schedule is maintained, the work of some sections will be delayed by failure to receive information from other sections.

JOURNAL VOUCHER

From ____________ Voucher No. ______
To ____________ Folio No. ______
Nature of Entry ____________ Date ______ 19__

	Account and Description	Detail	General Ledger			Customers Ledger		
			Debit	Acct. No.	Credit	Debit	Credit	

Entered ____________ Approved ____________
Bookkeeper General Auditor

Form 1. Journal Voucher

The first requisite of a well-organized accounting system is to have the voucher reports made regularly. This requirement involves the co-operation of the employees and officers with the general auditor and his staff. While the head of the accounting department must be responsible for the maintenance of the accounting records, he cannot accomplish his task unless those responsible for the initiation of transactions are made to realize the importance of reporting them promptly. They can be made aware of their part in this relationship by being required to fill out certain forms by a stipulated time. This necessitates the establishment and enforcement of a journal voucher schedule.

The journal vouchers received by each section are filed in a loose-leaf binder and used as a posting medium to the records of the section.

Relation of General Auditor to Others

The attitude of the general auditor to the public auditor should be one of cordial co-operation. The inspection of the books of account by the outside auditor is necessary to inspire confidence in the impartiality of the statements. The judgment of the outside auditor is made in an impersonal way without the bias that quite naturally may arise in the mind of the accountant who is associated with the activities of one particular business.

The functions of the outside auditor may vary from checking the work done to making constructive suggestions for improving the methods of recording and presenting the accounting and statistical data. In the past the public auditor devoted himself primarily to the task of verification. The modern tendency is to value his services, because to his analysis he brings a new point of view and he is able to offer and suggest improvements in methods out of the wealth of his varied experience with many kinds of business.

Within the organization the company's general auditor may be assisted by men who serve as links between the accounting department and other departments of the business, such as selling, purchasing, and production. If the auditor is responsible for devising the records used to gather information about the transactions in these departments, he should have the opportunity of seeing that the records are properly used and that the information placed on them accords with the directions of the accounting department. This usually may be best accomplished by his representatives who exercise supervision over the records within each department.

Finally the auditor may be concerned with the developing of statistical records and reports. In every business statistical reports must be made both from the accounting records and

from other sources. In some cases these reports are prepared by the accounting department, in others, by a separate statistical organization. In any case, close co-operation between the statistical department and the accounting department is necessary not only to prevent duplication and overlapping, but also to enable each department to have the benefits of the other's records and reports in interpreting its own.

The Duties of the Controller

The controller is one of the principal executives of a business. He is elected usually by the board of directors and is answerable directly to them, although under the executive direction of the president. If his work is to be effective, he should have the same official standing as the executives in charge of sales, production, and finance. Otherwise he is apt to have difficulty in obtaining the co-operation necessary for the successful accomplishment of his task.

The controller is responsible for the use of the accounts rather than for their construction. Therefore he should be the final authority on accounting methods and procedure. He should be responsible less for the execution of his plans and suggestions than for the interpretation of the accounting reports and should submit recommendations based on these reports to the other executives.

The duties of the controller will depend upon the organization of the business. Sometimes, in addition to the function of controller, he performs that of an auditor though some of the latter official's duties may devolve upon the assistant controller. This is only a variation in terminology, however, and not in the principle previously stated that a general auditor or other executive should be head of the accounting department.

Relation of the Controller to the Auditing Organization

In general terms the controller directs, while the auditor performs. In pursuance of this policy, the controller either outlines the classification of accounts and the supporting records to be

used, or approves those prepared by the general auditor. The general auditor is responsible for the maintenance of the records and accounts after they have been authorized and for the reports prepared from the accounting records. The controller may prescribe the form and content of the reports but the general auditor is responsible for the preparation of the reports sent to the executives and board of directors. Usually the general auditor submits these reports to the controller for his approval before they are distributed. In some cases the controller maintains a record of the reports to be prepared and of the parties who are to receive them, in which case, after he has approved them they are distributed from his office. This affords a central control of the distribution of reports.

Being responsible for the interpretation of the accounting reports, the controller should study them as a basis for offering recommendations to the executive officers. He should explain variations from the normal in the operations of the business, and either submit his explanation with the report, or reports, concerned, or transmit it as early as possible to the officials interested. The officials should have the privilege of requesting from the controller such information as they may need to interpret the reports or to serve as a basis for action made necessary or desirable by the information disclosed by the reports. The controller maintains files of all reports and of all correspondence concerning the meaning or interpretation of accounts and the accounting reports.

The controller is responsible for issuing orders covering methods and procedure not only in the accounting department, but in other departments over which he has functional control. For instance, he may have control over the balance of stores records maintained in the production department, the shipping procedure of the shipping department, and similar activities in other departments. A file of all orders issued by the controller should be kept to serve as official authority for the methods employed.

Staff of the Controller

The controller usually has a staff to assist him in the performance of his functions. The size of this staff and its duties are dependent on the size of the business and the extent of the authority exercised by the controller. If a system of budgetary control is maintained under his direction, it will be necessary for him to have a statistical staff to compile the original estimates and to summarize the periodical reports showing the comparisons between estimates and results. When a complete system of budgetary control is operated, this is a task of considerable magnitude.

Assistants to the controller may also render aid in the interpretation of reports and the preparation of comments thereon. Certain assistants may devote their time to a study of methods and the preparation of orders putting into effect any changes which have been decided upon. Occasionally such work is carried on by a methods bureau attached to the controller's office which not only recommends the adoption of new methods, but supervises their installation after they are authorized. In addition to the staff which is directly responsible to him, the controller has functional representatives in other departments of the business working under him to obtain the correlation of functions. These representatives may be responsible directly to him, or they may be answerable to the line executive in the department where employed. In any case, they must co-operate with the controller so that effective control may be exercised.

As illustrations of such functional representatives may be mentioned the following:

1. Sales and Publicity Controller
2. Operating and Production Controller
3. Buying and Merchandise Controller
4. Credit Officer as Credit Controller

The sales and publicity controller is responsible for the following:

1. Supervision of the collection of statistical data with reference to sales and the preparation of reports to show how effectively the sales program is being executed.
2. Supervision of the sales expense budget and the preparation of reports in connection therewith.
3. Supervision of the advertising expense budget and the preparation of the reports which make possible this control.

It is also the duty of the sales and publicity controller to advise and assist in the preparation of the sales budget, selling expense budget, and advertising budget. But the actual preparation of these budgets should be left to the executives responsible for their execution.

The operating and production controller is responsible for the following:

1. The collection and interpretation of data as a basis of plans for more effective operating methods.
2. The preparation and interpretation of data to be used in the formulation of the production budget. The preparation of this budget should be left to the executives responsible for its execution.
3. The supervision of the execution of the production budget and the preparation of reports which will make possible comparisons of actual with estimated production.

The buying and merchandise controller performs a function in the mercantile establishment similar to that performed by the operating and production controller in a manufacturing establishment. Some of his most important duties are:

1. The preparation of data as a basis for the buying budget.
2. The supervision of the buying budget and the preparation of reports which will make possible control of this budget.

3. The supervision of merchandise stocks for the purpose of keeping them at the lowest minimum consistent with meeting sales demands.

In an establishment carrying large stocks, this last task is of considerable magnitude and of great importance.

The credit manager is usually not directly answerable to the controller, but these two officials must co-operate to obtain proper control of the credit of the firm. The establishment and enforcement of credit limitations are dependent largely on the information provided by the accounting records; moreover, the credit plans and possibilities are an important factor in the formulation of the general budgetary plans. The credit that may be obtained and must be granted affects the sales and financial plans to a decided degree. Consequently the credit manager working with the controller must formulate his credit plans and see that they are carried out.

The foregoing explanation does not imply that functional representatives of the controller act in an executive capacity. Their duty is to advise and supervise. The line executives exercise the control, but the controller, or his representative, makes it possible for this control to be exercised in a rational way. Executives may or may not bear the titles suggested in the preceding discussion and duties ascribed to them may be performed by the controller's assistants or by assistants of the departmental executives. As before explained, the purpose of the present discussion is not to formulate an arbitrary plan of organization, but to emphasize the necessity for the performance of these functions and correlating them with the functions of the controller.

Controller's Use of Advisory Officers

As indicated by the preceding discussion, the controller is brought into intimate contact with every phase of the business and it is his function to formulate methods of control for all departmental activities. In the performance of this task, he is

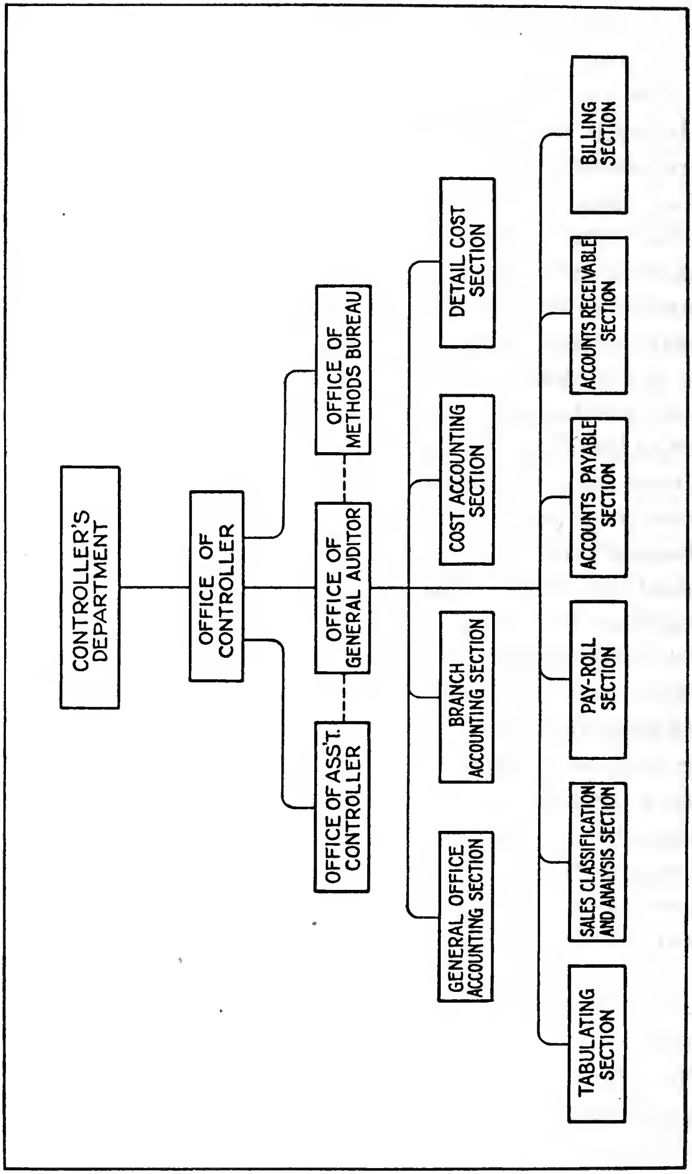
forced to deal with technical matters with which he cannot be expected to be familiar, consequently it is necessary for him to consult other officers of the corporation to obtain the technical information he needs. To indicate the possibility of co-operation between the controller and such advisory officers a few illustrations are given.

Many large corporations employ an attorney who devotes his full time to the service of the corporation. Smaller corporations retain attorneys to serve as counsel when needed. In either case the controller should have the privilege of consulting such counsel on legal matters pertaining to the corporation. Questions relating to taxation, reorganization, increase of stock, or bonded debt are illustrations of matters which it may be desirable to submit to legal counsel. Since the accounting records reflect the operations of the business, all legal questions involving the business are of importance to the controller and his staff.

On questions of maintenance and equipment engineers should be consulted. In the control of the cost of maintenance of plant and equipment, the engineer and the appraiser may render useful service in the making of budgets and the estimating of costs. The service of the engineer and the service of the controller should supplement each other.

On questions of production costs and production methods, the efficiency engineer should be consulted. Just as the mechanical engineer may be of service in advising with reference to plant and equipment cost and maintenance, so may the efficiency engineer be of service in advising with reference to the most efficient methods of using the plant and equipment. His service and advice should be available to the controller both in making plans and in judging the efficiency with which these plans are carried out.

The officers in charge of buying and of merchandise stock can render valuable assistance in the preparation of the buying budget and in exercising control of merchandise stock. Only by a proper consideration of market conditions, as reflected in the reports of



Form 2. Chart Illustrating Accounting Organization

the officers engaged in the merchandise operations, can the controller make rational plans with reference to purchases of stock, or properly interpret the results obtained in the performance of these plans.

In the same manner in which the controller must consult the buying officer with reference to purchases and stock control, he must consult the sales officers on sales control. Sales plans and policies must consider market conditions and such conditions can be ascertained most easily and accurately from those engaged in mercantile operations.

Finally the controller should consult the auditor with reference to accounting details and the interpretation of accounts, subsidiary statements, and reports with which he is not familiar.

From the preceding discussion it can be seen that the proper function of the controller is to assemble data with reference to all the activities of the business, analyzing, classifying, and presenting these data, and finally recommending methods of procedure based on the proper interpretation of these facts.

Illustration of Accounting Organization

To illustrate concretely the organization through which accounting and statistical control is exercised, a chart (Form 2) is given. It gives a typical organization of the accounting department of a large manufacturing business and indicates the lines of control and the interrelationships of duties and functions.

CHAPTER II

ANALYSIS OF BORROWERS' FINANCIAL STATEMENTS

By Charles M. Neubauer

Basis of Credit

The basis of credit received from a bank or banker, as well as that received from a commercial house, must be the moral character of the borrower. Without that element no loan is safe even if secured, unless it is given a certain amount of supervision, which most often is daily. The question immediately presents itself: Is such constant supervision profitable? The answer to this is invariably that it is not. This is particularly true if the loan is what may be called "legitimate," that is, presenting no undue or disproportionate amount of profit. Under this head of moral character are classed the concern's general reputation in the trade, that is, whether it carries out its contracts and agreements in the spirit as well as in letter; the personal reputation of its proprietors or officers; and the ability of its personnel to conduct the business safely, properly, and profitably. Thus the character and capacity of the concern must be definitely established before its financial statement becomes an important factor. A lack of sound moral character and good business capacity makes the financial statement entirely negligible.

It is well to remember that bank loans are ordinarily made for short terms and are for the purpose of augmenting the working capital of a concern for the limited period when its buying, manufacturing, or trading is at its height. The loan is intended to supplement temporarily the invested capital of the proprietory interests during such period, and not to become permanent. General commercial bank loans run from 30 to 90 days, any

longer term being considered more or less exceptional and as presenting a special problem.

Financial Statements

Form 1 illustrates the kind of financial information required by a large New York bank relative to a concern's standing in order to pass adequately and justly upon the granting of credit. The balance sheet (Form 1a) occupies the place of prominence. It appears on the first of the four pages of the financial statements, and is supported by schedules of accounts of greatest interest to the banker, and by other schedules giving specific information as to acquirement, valuation, and liquidation of the different items. These schedules appear on the subsequent pages of the statement.

The assets in the balance sheet are divided into three groups, viz., Quick, Invested, and Deferred Charges. Under Quick Assets are listed, practically in the order of their liquidity, Cash on Hand, Cash in Banks, Notes Receivable, Accounts Receivable, and Inventory. Under this head the item of Liberty Bonds may also be placed. The bonds, however, are thus classified for purely patriotic reasons as the practice is an exception to the principle upon which the grouping of assets is based. The five items given above comprise all that it is proper to include under the head of Quick Assets, unless there is some other account which it is reasonably certain will be turned into cash within, say, a 3 or 4 months' period.

Under the title, Invested Assets, are all accounts representing permanent assets, such as the following: Land, Buildings, Machinery, Fixtures, Equipment, Investments, Patents, and Good-Will.

Under Deferred Charges are entered items of the nature implied by the term, such as Unexpired Insurance Premiums, Prepaid Interest, etc.

A separate total is carried out for each class and a grand total effected.

The liabilities are classified in two groups—the Short-Term

CORPORATE FORM **CREDIT FILE No.**

NAME (Corporate Style Under Charter) *Doe & Roe Corporation*
LOCATION *300 Broadway, N.Y. City*

To ——— NATIONAL BANK, New York

The following true and accurate statement of the financial condition of this Corporation on the *31* day of *December* 19*20* is made and furnished by the undersigned for the purpose of procuring Credit from time to time with you for our negotiable paper or otherwise.

BALANCE SHEET (Federal Reserve Bank Requirement)

ASSETS	ITEMIZE			TOTAL			
QUICK ASSETS							
Cash on Hand	*1*	*547*	*50*				
Cash in Banks (Schedule 1)	*56*	*507*	*75*				
Notes Receivable (Schedule 2)	*100*	*000*	—				
Accounts Receivable (Schedule 2)	*456*	*768*	*09*				
Inventory (Schedule 3)	*568*	*940*	—				
				1	*183*	*763*	*34*
INVESTED ASSETS							
Land (Schedule 8)	*75*	*000*	—				
Buildings (Schedule 8)	*300*	*000*	—				
Machinery, Fixtures, Equipment (less Reserve $ *15,000*	*250*	*000*	—				
Investments (Schedule 4)	*25*	*000*	—				
Patents and Goodwill	*200*	*000*	—				
					850	*000*	—
DEFERRED CHARGES							
Unexpired Insurance Premiums	*5*	*660*	*25*				
Prepaid Interest, etc.	*4*	*280*	*40*		*9*	*940*	*65*
TOTAL ASSETS				*2*	*048*	*703*	*99*

LIABILITIES	ITEMIZE			TOTAL			
SHORT TERM INDEBTEDNESS (Due Within One Year)							
Notes given for Merchandise	*42*	*050*	—				
Notes given for Borrowed Money (Schedule 1)	*250*	*000*	—				
Accounts Payable (Schedule 6)	*490*	*480*	*60*				
Liability for Acceptances under Letters of Credit (Schedule 1)	*40*	*000*	—				
Deposits of Money (Schedule 5)	*150*	*000*	—				
Dividends Unpaid, Accrued and other Liabilities	*75*	*000*	—				
				1	*047*	*530*	*60*
LONG TERM INDEBTEDNESS (Due After One Year)							
Notes given for Borrowed Money (Schedule 1)							
Deposits of Money (Schedule 5)	*100*	*000*	—				
Bonded Debt. (Schedule 7)	*125*	*000*	—				
Mortgages on Real Estate or Chattels (Schedule 8)	*50*	*000*	—				
Other Liabilities due after one year							
Special Reserve (Not Deducted from Assets)	*60*	*000*	—		*335*	*000*	—
TOTAL LIABILITIES				*1*	*382*	*530*	*60*
CAPITAL							
Preferred Stock Issued					*500*	*000*	—
Common Stock Issued					*500*	*000*	—
Surplus (As per Surplus Account) *Deficit*					*338*	*826*	*61*
Deficit (As Per Surplus Account)							
TOTAL					*661*	*173*	*39*

Amount of Forward Purchases not included in either Assets or Liabilities *$125,000*

Doe & Roe Corporation
FIRM SIGNATURE *Richard Roe*
BY *Treasurer*

Form 1. (a) Financial Statement Submitted to Bank by Borrower (first page)

Indebtedness and the Long-Term Indebtedness. The Short-Term Indebtedness is indebtedness due within one year from the date of the statement. It includes the following items, given in the order named, in which it is presumed the debts will mature: Notes given for Merchandise, Notes given for Borrowed Money, Accounts Payable, Liability for Acceptances under Letters of Credit, Deposits of Money, Dividends Unpaid and Accrued, and other liabilities due within one year.

Long-Term Indebtedness embraces the liabilities due after one year from the date of the statement, and includes such items as Notes given for Borrowed Money, Deposits of Money, Bonded Debt, Mortgages on Real Estate or Chattels, Other Liabilities due after one year, and any special reserves not deducted from the assets. It is to be noted that valuation reserves are to be shown in the balance sheet as deductions from the asset items to which they pertain. A further concession is allowed in the matter of the Liberty Bond item. Any indebtedness due to borrowing money against the pledge of Liberty bonds may be deducted from the total par value of Liberty bonds held and the Liberty Bond item stated net under the quick assets or simply the equity shown. No mention of the indebtedness need then be made upon the balance sheet.

The capital items are as usual in the same section with the liabilities, and are divided to show preferred, common, or any other classes of stock issued; also surplus or deficit.

The amount of forward purchases or commitments for merchandise, either on order or contract, which are not included in the assets or liabilities, is also considered a very important element, and space is provided for this information on the same page with the balance sheet. At the foot of the page the borrower affixes his signature.

Accounts and Schedules

The remaining three pages of the financial statement (Forms 1b, c, and d) contain the accounts and schedules. A section

CONTINGENT LIABILITY (Federal Reserve Bank Requirement)

FORM	AMOUNT			FORM	AMOUNT		
Upon Customers Notes Discounted, Sold, or Otherwise Transferred	25	000	—	For Accommodation Endorsements or Guarantees			
Upon Drafts Discounted or Sold				Under Conditional Sale Contracts or Purchase Arrangements			
Upon Bonds or other Obligations of Subsidiary Cos.				Under Agreement for Stock or other Subscription			
Upon Leases				Under Pending Law Suits			
Upon Unused Letters of Credit Outstanding				TOTAL			

Is this Company a guarantor or endorser of any liabilities of any individual, firm, or corporation, or is it liable under any contracts bonds or profit sharing arrangements or any other aggreementr, or are there any law-suits pending except as set forth above?

PROFIT AND LOSS ACCOUNT FROM *Dec. 31* 19*19* to *Dec. 31* 19*20*

Inventory at beginning of Period (*Dec. 31* 19*19*)	402	970	80	Inventory at End of Period (*Dec. 31* 19*20*)	568	940	00
Purchases-Net (Less Returns, etc., $ *80,000*)	2 200	500	—	Sales-Net (Less Returns, etc., $ *75,000*)	2 350	670	00
Operating Expenses	332	456	20	Commissions Earned			
General Expenses	126	750	45	Discounts Earned	26	075	50
Bad Debts Charged Off	14	560	15	Income from Investments, etc.	1	250	—
Depreciation Charged Off	15	000	—	Losses of Previous Periods Recovered			
Reserves Created							
NET PROFIT				NET LOSS	145	302	10
TOTAL	3 092	237	60	TOTAL	3 092	237	60

SURPLUS ACCOUNT FISCAL PERIOD ENDING *31 December* 19*20*

Deficit at beginning of Period	108	524	51	Surplus at beginning of Period			
Dividends Paid Pref. $ Com. $	75	000	—	Credits to Surplus during Period			
Special Reserves Created	10	000	—				
Other Charges to Surplus							
Net. Loss (from P&L Acct.)	145	302	10	Net Profit (from P&L Acct.)			
Surplus as per statement				Deficit as per Strtement	338	826	61
TOTAL	338	826	61	TOTAL			

INSURANCE

FORM	ASSETS COVERED	BENEFICIARY	ASSIGNEE	AMOUNT		
Fire	Merchandise	*Corp.*		500	000	—
Fire	Buildings and Equipment	"		500	000	—
Credit	Accounts and Bills Receivable					
Life	Endorsers or Executives	"		200	000	—
Other Kinds						
			TOTAL	1 200	000	—

SCHED. 1 CASH, NOTES GIVEN FOR BORROWED MONEY, AND LIABILITY FOR ACCEPTANCES UNDER LETTERS OF CREDIT

DEPOSITORY BANKS	Cash Balance at Date of Statement			Line of Credit Received from each			Amount Owing on Date of Statement: Notes			Amount Owing on Date of Statement: Acceptances			Security, Endorsements of Guarantees given
First National Bank	12	045	90	75	000	—	75	000	—				
Second National Bank	10	597	05	75	000	—	50	000	—				
City Trust Co.	23	364	80	100	000	—	75	000	—	40	000	—	*7 Officers*
Home Trust & Saving Bank	10	500	—	50	000	—	50	000	—				
OTHER SOURCES OF CREDIT (Note Broker)													
Total as per Balance Sheet	56	507	75	300	000		250	000		40	000		

If your Branches borrow locally, state amount owing not included in bills payable (Schedule 1) $

Form 1. (b) Financial Statement Submitted to Bank by Borrower (second page)

for Contingent Liabilities is provided, as this item is always considered by the loaning bank in conjunction with the liabilities outstanding. The section provides for the reporting of the nature of the original transactions out of which the contingent liabilities have arisen.

The Profit and Loss and Surplus accounts, in so far as possible, should be transcripts from the books. In some cases it may be necessary to total some of the details reflected in the books, but the information thus given should, nevertheless, adhere strictly to the data in the accounts, as otherwise these accounts will not prove with the remainder of the statement or with statements previously rendered, and will cause an unfavorable impression and make necessary further questioning upon the particular points. Care should be exercised to have the opening balances of both the Profit and Loss and Surplus accounts agree with their balances in the accounts of the statements previously rendered.

A memorandum schedule of insurance is provided to show the adequacy of protection against every kind of hazard.

Schedule 1 (see lower part of Form 1b) combines Cash, Notes Given for Borrowed Money, and Liability for Acceptances under Letters of Credit. The schedule is so arranged as to present the name of the bank with which the cash is deposited and the balance at statement date; the line of credit received from the bank; the amount owing the bank on statement date, divided between notes and acceptances; and finally what security, indorsements, or guaranties have been given. If any notes are placed with note-brokers to be sold in the open market, this fact should also be entered in the lower part of the schedule.

Schedule 2, Notes and Accounts Receivable, shown on page 3 of the financial statement (see Form 1c) divides these items in separate columns between trade and other debtors. The trade total, being considered quick, should agree with these items included under Quick Assets on the balance sheet. The remainder necessarily would be reflected under the head of Invested Assets

SCHEDULE 2 NOTES AND ACCOUNTS RECEIVABLE

DESCRIPTION	Notes Receivable		Accounts Receivable		
DUE FROM TRADE DEBTORS (Not including any item in "Other Debtors")					
For Merchandise Sold upon Regular Terms	25	000	225	040	95
Accounts Receivable over Six Months Old or Past Due Notes	10	000	56	954	10
TOTAL TRADE	35	000	281	995	05
DUE FROM OTHER DEBTORS, (Inter-Company, Controlled Companies, etc.)					
Officers, Directors Stockholders or Employees	5	000	2	340	00
Own Selling Houses or Branches			43	974	08
Subsidiary Corporations	20	000	25	000	
Allied, Controlled or Affiliated Interests	40	000			
For Capital Stock Sold					
For Merchandise on Consignment					
Cash Advances (Security Therefor if Any $			103	458	96
Commissions Due and Payable					
Other Accounts and Notes Receivable					
TOTAL OTHER DEBTORS					
Less Reserves Created to Cover Possible Discount and Losses					
TOTAL AS PER BALANCE SHEET	100	000	456	768	09
What Amount of Accounts or Notes receivable has been Discounted or Pledged?	25	000			

SCHEDULE 3. INVENTORY (Should be taken at cost or market price - whichever is lower)

TAKEN *31 December* 19 *20* By *Richard Roe*

DESCRIPTION		AMOUNT	
Finished Merchandise	(How Priced? *Mkt.*)	206	040
Merchandise in process	(" " *Cost*)	120	500
Raw Material	(" " *Cost*)	232	200
Supplies, etc		10	200
Other Items Included in Inventory			
TOTAL			
Less Reserve and Allowance for Merchandise of Obsolete Pattern or Otherwise not Readily Saleable			
TOTAL AS PER BALANCE SHEET		568	940
What Amount is held by you under Trust Receipt?		75	000
What Amount do you hold on Consignment (Included in Inventory?)			
What Amount has been Pledged as Collateral for Loans or Advances?		50	000
What Amount has been priced at more than Cost?			
What is Amount of Unfilled Orders on Hand?		5	000

SCHEDULE 4. INVESTMENTS

DESCRIPTION OF SECURITY		No. of Bonds or Shares Held	AMOUNT PLEDGED		PAR VALUE		BOOK VALUE		Income or Dividend Rec'd Last Year	
Liberty Bonds 4th	*4¼*	*3*	*3*	*000*	*3*	*000*	*3*	*000*	*127*	*50*
Victory Notes	*4¾*	*3*	*3*	*000*	*3*	*000*	*3*	*000*	*142*	*50*
A.B.C. Corporation	*Stock*	*90*			*9*	*000*	*4*	*000*		
D. & R. Distributing Co.	"	*300*			*15*	*000*	*15*	*000*		
TOTAL AS PER BALANCE SHEET							*25*	*000*		

SCHEDULE 5. DEPOSITS OF MONEY

NAME OF DEPOSITOR	AMOUNT		MATURITY	Rate of Interest	Security, Endorsement or Guarantees
Jennie Doe	*50*	*000*	*Demand*	*6%*	*None*
Ethel Roe	*50*	*000*	"	"	"
John Smith	*25*	*000*	"	"	"
Alfred Jones	*25*	*000*	"	"	"
Robert Roe	*100*	*000*	*July 1, 1924*	*6%*	"
TOTAL AS PER BALANCE SHEET	*250*	*000*			

Form 1. (c) Financial Statement Submitted to Bank by Borrower (third page)

in the balance sheet. The various items in this schedule present a fair idea as to what is slow and not to be included in working capital, so far as notes and accounts receivable are concerned. As this schedule clearly indicates, all notes and accounts receivable are not looked upon in the same light by the banker. They should therefore not be lumped and thrown into the balance sheet in one item as is so frequently done. Any reserve provided for the receivables should be deducted from the total of the schedule and only the net amount should be carried to the balance sheet under Quick and Invested Assets, according to the classification and distribution of the schedules.

The inventory, shown in Schedule 3, should be taken at cost or market price, whichever is lower, which in turn should not be difficult to remember in these days of the income tax. The schedule divides the merchandise into the various stages of completion, allows for the item of Supplies, which is not always considered as a good merchandise item to be classed as a quick asset. The exact status of the merchandise is also required, i.e., whether it is pledged in any manner, is on consignment, or is out on a trust receipt. Any reserve provided for merchandise should be deducted in this schedule, and the net amount of the item carried to the balance sheet, as in the case of notes and accounts receivable.

Schedule 4, Investments, is a list of all investments held, such as marketable securities or stocks or bonds of subsidiary companies. It gives a description of each security, the number held, amount pledged for loans, if any, the par value, and the amount at which the security is carried upon the books, with the yield, either interest or dividend, per year.

Schedule 5, Deposits of Money, is a list of money deposits accepted as loans, with the agreements under which the deposits have been received and a description of the security given.

Schedule 6, Accounts Payable (see Form 1d), is itemized to show the nature of the account, but this does not affect the distribution of the items between the current or short-term liabilities or

SCHEDULE 6 - ACCOUNTS PAYABLE

DESCRIPTION	AMOUNT		
For Merchandise Purchased upon Regular Terms, Not Due	225	060	—
" " " " " " Past Due	130	420	60
Due Officers, Directors, Stockholders or Employees	135	000	—
Other Accounts Payable			
TOTAL AS PER BALANCE SHEET	490	480	60

SCHEDULE 7 - BONDED DEBT (Federal Reserve Bank Requirement)*

DESCRIPTION	Amount Authorized		Issued and Outstanding		Amount Pledged as Collateral to Loans		Maturity	Rate of Interest	TRUSTEE OR MORTGAGE
First Mortgage	150	000	125	000	60	000	5/1/25	6%	*Home Trust & Saving Bk.*

*Upon what Assets are the above described Bonds a lien?

Provision for Retirement

SCHEDULE 8 - REAL ESTATE (Please give particulars of each parcel)

DESCRIPTION	LOCATION	OWNER OF RECORD	VALUE*		MORTGAGES		EQUITY	
Factory Site	*Long Island City*	*Doe & Roe Corp.*	75	000	50	000	325	000
Buildings of Plant	*do*	*do*	300	000				
		TOTAL AS PER BALANCE SHEET	375	000	50	000	325	000

VERIFICATION If your books have been audited by a Certified Public Accountant state his name and date of Audit *Byrnes & Baker* *31 December 1920*

CHARACTER OF BUSINESS (Federal Reserve Bank Requirement)

Describe briefly the character of Business you conduct *General Mercantile & Manufacturing of*

PURPOSE OF BORROWING (Federal Reserve Bank Requirement)

State whether the proceeds of Loans applied for or to be applied for are to be used

(A) For Investment in Securities, Lands, Plants, Buildings, Machinery, Improvements or Equipment,

(B) In the Production, Manufacture and Distribution of Commodities of Agriculture, Industry or Commerce

MAXIMUM AND MINIMUM LIABILITIES

When did your Liabilities reach their Maximum last year *31 January* 19*20* Amount $ *1,400,000*

" " " " " " Minimum " " *31 August* 19*20*, " $ *300,000*

Have any of your Accounts been Assigned or Assets Pledged or is there any Lien upon them except as noted above? *No*

N.B. It is most essential that each question be fully answered

AFFIDAVIT

STATE OF *New York*
COUNTY OF *N. Y.* } s.s. *Richard Roe* being duly sworn deposes and says; that he is *Treasurer* of *Doe & Roe Corporation*

the Corporation whose financial statement appears above, that he signed the said statement after reading it and the accompanying schedules, and that the same is in all respects a full, true and accurate statement of the financial condition of said Corporation.

on the *31* day of *December* 19*20* Sworn to before me this *5* day of *March* 19*21*

Edward Townsend

Notary Public

Form 1. (d) Financial Statement Submitted to Bank by Borrower (fourth page)

indebtedness, and the long-term liabilities, which is determined, as has been stated, by the maturity dates of the items.

Schedule 7, Bonded Debt, is an explanation with details of the outstanding bonds, if any.

Schedule 8, Real Estate, is a list of the firm's or corporation's real estate holdings, showing the equity held in the properties.

Comparison Sheets

When the bank receives from the borrower the statement outlined above, the items are transferred to a comparison sheet (Form 2), which allows space for the comparison of about five periods. To arrive at the amount of working capital the current or short-term liabilities are placed directly under the quick assets. (See Form 2.) The items under these heads are in much the same order as on the sheet filled out by the applicant or borrower. They are totaled and a difference taken. Assuming the quick assets to be in excess of the current liabilities, the difference is the amount of working capital used in the business. The ratio of the quick assets to the current liabilities is calculated upon the dollar basis, giving the number of dollars and cents of quick assets on hand to meet every dollar of the current liabilities.

The invested, fixed, and other assets, or what are sometimes called "permanent" assets, are next listed and brought down to a total. These assets are offset by the "other" or long-term liabilities, in which are included the reserves for the invested assets. The excess of the invested, fixed, and other assets over the long-term liabilities is determined, and again a ratio is calculated showing the number of dollars of permanent assets to meet one dollar of long-term liabilities.

The reserves for all the working assets are deducted on this sheet from the gross amount of the assets to which they apply, leaving a net amount which is used in the comparison sheet, whereas reserves affecting the invested, fixed, and other assets are set up separately with the long-term liabilities, thus permitting the total of original investments to be stated upon the com-

NATIONAL BANK	Comparison of Assets and Liabilities CORPORATE FORM	NAME *Doe & Roe Corporation* BUSINESS *Mercantile & Manufacturing of*		
	ASSETS, LIABILITIES, RESERVES AND CAPITAL	*Dec. 31, 1920*		
QUICK ASSETS	Cash	*58*	*055*	*25*
	Notes Receivable	*35*	*000*	
	Accounts Receivable—Less Reserve,	*281*	*995*	*05*
	Merchandise—Less Reserve	*558*	*740*	—
	Liberty Bonds—Equity,	*6*	*000*	—
	Total Quick Assets,	*939*	*790*	*30*
CURRENT LIABILITIES	Notes Payable—Banks,	*250*	*000*	—
	Notes Payable—Others,	*42*	*050*	—
	Acceptances Payable,	*40*	*000*	—
	Accounts Payable,	*490*	*480*	*60*
	Accrued Items,	*75*	*000*	—
	Long Term Indebtedness Maturing,			
	Due to Allied, Controlled, Affil., & Sub., Co's,			
	Deposits of Money	*150*	*000*	—
	Total Current Liabilities,	*1047*	*530*	*60*
	EXCESS—CURRENT L.	*107*	*740*	*30*
	RATIO			*89*
INVESTED FIXED AND OTHER ASSETS	Investments,	*19*	*000*	—
	Land and Buildings—Plants,	*375*	*000*	—
	Machinery, Equipment and Fixtures,	*265*	*000*	—
	Trade Marks, Formulas, Goodwill, Etc.,	*200*	*000*	—
	Due from Allied, Controlled, Affil., & Sub., Co's	*128*	*974*	*08*
	Due from Stockholders, Officers and Employes,	*7*	*340*	—
	Advances, Loans, Deposits, Etc.,	*103*	*458*	*96*
	Supplies, Samples, Etc.,	*10*	*200*	—
	Deferred Charges,	*9*	*940*	*65*
	Total Invested, Fixed and O. A's.	*1118*	*913*	*69*
OTHER LIABILITIES AND RESERVES	R. E. Mortgages, Bond Debt,, Etc.	*175*	*000*	—
	Reserve—Depreciation of Plant Property,			
	Machinery, Equipment, Fixt.	*15*	*000*	—
	Deposits of Money	*100*	*000*	—
	Special Reserve	*60*	*000*	—
	Total Other Liabilities and Reserves,	*350*	*000*	—
	EXCESS—INVESTED, FIXED, ETC.	*768*	*913*	*69*
	RATIO		*3*	*20*
CAPITAL ACCOUNT	Capital Stock Outstanding,	*1000*	*000*	—
	Deficit	*338*	*826*	*61*
	Total Capital Account,	*661*	*173*	*39*
SUMMARY	ASSETS			
	Quick,	*939*	*790*	*30*
	Invested, Fixed and Other,	*1118*	*913*	*69*
	Total,	*2058*	*703*	*99*
	Liabilities, Reserves and Capital,			
	Current Liabilities,	*1047*	*530*	*60*
	Other Liabilities, and Reserves,	*350*	*000*	—
	Capital Account (Net Worth),	*661*	*173*	*39*
	Total,	*2058*	*703*	*99*
	Notes Receivable—Discounted	*25*	*000*	—

For Details Please Turn Over

Form 2. Bank's Comparison Sheet of Borrower's Assets and Liabilities

National Bank

COMPARISON OF INCOME AND CAPITAL ACCOUNT

CORPORATE FORM

NAME ____________

BUSINESS ____________

PERIOD—NUMBER MONTHS					
PERIOD—ENDED					
INCOME ACCOUNT					
Net Sales,					
Increase (Black) Decrease (Red)-Per Cent.,					
Cost of Sales,					
Gross Profit on Sales-Per Cent.,					
Expenses and Other Charges,					
Net Profit from Operations,					
Net Profit on Sales-Per Cent.,					
Other Income,					
Total Income,					
Less-Cash Dividends,					
Balance transferred to Surplus,					
CAPITAL ACCOUNT					
Surplus:					
Balance transferred from Income Account,					
Other Additions,					
Surplus-Beginning,					
Total,					
Deductions-Stock Dividends,					
Other,					
Surplus-Ending,					
Revaluation of Assets-Net,					
Book Surplus-Per Balance Sheet,					
Capital Stock-Outstanding:					
Original and Dividend Issues,					
New-For Cash or Equivalent,					
Net Worth,					
OTHER DETAIL					
Average Sales-Per Month,					
Average Operating Expenditures-Per Month,					
Average Cost of Mdse. Used-Per Month,					
Estimated Minimum Quick:					
Cash,					
Receivables,					
Merchandise,					
Total Estimate Minimum Quick					
Salaries of Officials during above Period,					

Form 3. Bank's Sheet for Comparison of Income and Capital Account

parison sheet. These reserves are, of course, in the nature of depreciation or valuation items.

The Capital account is next listed on the comparison sheet, showing only two items, Capital Stock Outstanding and Surplus. When the statement shows a deficit instead of a surplus, the figure is placed opposite the word "Surplus" but written in red.

The summary consists of the totals effected as shown above, with the amount of the quick and invested assets, the total of which agrees with the total of the liabilities, reserves, and capital.

A line is allowed for the entering of notes receivable discounted or contingent liabilities.

The reverse of this sheet permits of the verification of the notes payable so far as the particular bank is concerned, and also the noting of any other detail, such as profit and loss and surplus, data which are thought to be of interest in comparisons when the profit and loss statement is not placed under a separate comparison sheet.

Other sheets are used for making the following comparisons: comparison of income and capital account (Form 3); comparison of excess quick, excess slow, and net worth (Form 4), and borrower's statement of assets and liabilities (Form 5).

The forms given here are all used for the corporate form of business organization, and they differ from the firm or single proprietorship forms only in the capital accounts. Inasmuch as this difference is of minor importance, it is not necessary to illustrate comparison sheets for a single proprietorship or a partnership.

Reasons for Analysis

Now what is the reason for what probably seems to the average business man who reads a detailed description of this procedure for the first time to be an amount of work unwarranted by the result achieved?

National Bank

COMPARISON OF EXCESS QUICK, EXCESS SLOW, AND NET WORTH

CORPORATE FORM

NAME

BUSINESS

Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						
Net Worth and How Invested			Increase Decrease			Increase Decrease
Excess Quick Excess Slow Net Worth						

NOTE. Record Excess Assets over Liabilities in Black and Contra in Red

Record Increases in Black and Decrease in Red

Form 4. Bank's Comparison Sheet—Borrower's Excess Quick Assets, Excess Slow Assets, and Net Worth

Name________________________________

BORROWER'S STATEMENT OF ASSETS AND LIABILITIES

Comparison________________19___ and________________19___

CORPORATE FORM

	STATEMENT DATES		INCREASES	DECREASES
	____ 19__	____ 19__		
QUICK ASSETS				
Cash,				
Notes Receivable,				
Accounts Receivable, Less Reserves,				
Merchandise, Less Reserves,				
Liberty Bonds (Equity),				
Total Quick Assets,				
CURRENT LIABILITIES				
Accounts Payable,				
Notes Payable, Banks,				
Notes Payable, Other,				
Acceptances and Drafts Payable,				
Long Term Indebtedness Maturing,				
Accrued Items,				
Total Current Liabilities,				
Excess, Quick,				
Ratio,				
INVESTED, FIXED AND OTHER ASSETS:				
Investments,				
Land and Buildings, Plant,				
Machinery, Equipment and Fixtures,				
Trade Marks, Formulaes, Goodwill, etc.				
Allied, Controlled, Affiliated and Sub. Co's.,				
Stockholders, Officers and Employes,				
Advances, Loans, Deposits, etc.				
Supplies, Samples, etc.				
Deferred Charges,				
Total Invested, Fixed and Other Assets,				
OTHER LIABILITIES RESERVES & CAPITAL A/c.				
R. E. Mortgages, Bonded Debt.. etc.,				
Reserve for Depreciation of Plant Property,				
Reserve For,				
Allied, Controlled, Affiliated, and Sub., Co's.,				
Capital Account:				
Capital Stock Outstanding,				
Surplus,				
Total Other Liabilities, Reserves and Capital A/c.				
ASSETS				
Quick,				
Invested, Fixed and Others,				
Total,				
LIABILITIES, RESERVES AND CAPITAL				
Current Liabilities				
Other Liabilities, Reserves and Capital Account,				
Total,				

Form 5. Borrower's Statement Sheet of Assets and Liabilities, with Comparisons

In the first place it should be noted that a bank may loan money as follows:

1. It may loan its capital, surplus, undivided profits, and general deposits, subject to restrictions as to maintenance of reserves and to limitations; it may also discount.

2. Its loans and discounts may be secured or unsecured, time or demand, long- or short-term; and its discounts may include acceptance by the bank of notes, drafts, or bills of exchange under certain restrictions and limitations.

3. The law imposes no limit on the total amount a bank may accept or discount for one person, firm, company, or corporation in bills of exchange or drafts secured by shipping documents conveying or securing title to goods actually shipped; or in demand obligations when secured by documents covering commodities in actual process of shipment.

4. No limit is placed on the total amount the bank may advance against commercial or business paper of other makers to any one person, firm, etc., provided the person, firm, etc., negotiating the loan actually owns the paper.

All of these fields are covered by a bank's loans and the aggregate reaches quite a sum. And in providing safeguards for the total, the various component parts are examined and passed upon separately as they are made, thus insuring for the entire amount loaned a degree of safety to be achieved in no other way.

The Purpose of Ratios

The first question that a banker wants answered concerns the liquid condition of the business desiring to borrow. How much working capital does it employ? What is the ratio of its quick assets to current liabilities? These questions are answered in the comparison sheets.

The ideal ratio between quick assets and current liabilities is 2 to 1. The term "ideal" is used advisedly, as different conditions and situations tend to make it impossible for every business undertaking to show a 2 to 1 ratio on their financial statement.

The ideal ratio means that the business is in a good financial condition so far as the working capital is concerned. Therefore, some concerns having customarily a lower ratio than 2 to 1 nevertheless are in a very healthy state when all the factors are considered. Among these factors are: nature of the business, particular season for that business, how the business is financed, amount of its permanent capital, status of its indebtedness (when due). If the working capital is not sufficient, the question arises as to whether the loan will supply the deficiency and whether the ratio is large enough to take care of the additional indebtedness to be incurred by borrowing from the bank.

These questions lead to an inspection of the items listed under Quick Assets to determine the following points:

1. Is there sufficient actual cash to meet indebtedness maturing immediately?

2. Are collections sufficiently prompt to furnish additional cash as required?

3. What is the merchandise turnover? How many months' supply of merchandise is on hand? Is it adequate, or is it excessive, requiring more money to carry it than is warranted?

4. If the merchandise item is heavy, what is the cause? Is it the carrying of obsolete merchandise in the hope of finding a market? Is it overbuying on a rising market and holding after the peak has been reached? If such a condition obtains, what is the possibility of disposing of the merchandise and at what prices?

Use of Ratios in Appraising Quick Assets

To determine some of the above points, ratios are relied upon, such as sales to receivables, in order to ascertain the number of months the receivables are outstanding as based upon average monthly sales, and thereby determine the promptness of collections; and sales to merchandise, to determine merchandise turnover, based again on average monthly sales (at cost) to determine number of months' merchandise supply on hand, which will quickly reflect any heavy merchandise condition. Some-

times, if it becomes a factor due to the conditions presented by the statement, the ratio of receivables to merchandise is ascertained upon the monthly basis to determine the extent of the profit reflected in receivables, which may not materialize quickly if collections are not prompt.

At this point it may be mentioned that in some cases at least, if not in all, the average merchant is too lenient in his calculations of the cost of carrying obsolete stock. It is thought that if the actual charges of carrying such merchandise were placed against the item definitely by opening an account for this purpose, the inadvisability of carrying merchandise for an undue length of time, owing to the expense incurred, would be brought quickly and forcibly to the attention of the responsible executives. This need only be a memorandum account, although the unsatisfactory nature of such an account is admitted; however, for this purpose an exception may be made and the proportionate share of interest, rent, and various other charges applying thereto correctly set forth. The profit which might have been made upon the normal turnover of merchandise having a ready market for the period during which the obsolete stock has been held, is also to be considered in this connection.

Another method by which a bank detects the carrying of obsolete merchandise is by observing whether the borrowings are steady and continuous. This information is outside of the financial statement, being a part of the bank's record of experience with the item in question. It is considered very important by the bank for purposes of reference. It must, however, be stated in this connection that "steady" borrowing is not always a positive indication of obsolete merchandise. As a matter of fact such borrowing is generally due to insufficiency of capital.

Nature of Quick Assets

The quick assets should include only those which, through the regular operation of the business, practically automatically,

and within a reasonable time, say 90 to 120 days, will be turned into cash; the exception being Liberty bonds, as heretofore noted.

The reasonable time in any particular case depends upon the terms of the trade or those extended or received by the particular undertaking. This period becomes the basis for determining whether or not the accounts outstanding exceed the amount for which credit should be granted by the concern.

It is also well to know that adequate insurance is carried upon the merchandise inventory or stock, and, if this information is not presented, inquiry should be made with regard to it.

Claims of any nature whatsoever, or accounts in dispute, judgments, and like items, must not be included in the quick assets but must be shown under a separate title in the section provided for the invested, fixed, and other assets.

When any doubt exists as to the liquidity of the accounts receivable, they should be examined and "aged," that is, classified, according to the terms granted to customers. Those exceeding the limit of the terms, plus a fair leeway to allow collections to arrive and postings to be made, should be excluded from the quick assets. At such a time the claims, etc., can also be eliminated.

Assets Used as Collateral

Before leaving the quick assets it should be noted that any pledged items have no place in this division of the balance sheet. This refers particularly to Notes and Accounts Receivable, as the Liberty Bond item receives separate treatment. Any amounts so pledged should be deducted from the total of the item and included among the permanent assets until released. This treatment necessitates the showing of the liability and is to be preferred to the omitting of both items, for which there does not seem to be any defense although it is practiced to some extent. The former treatment clearly depicts the actual status of the account and does not lead to incorrect inferences.

Nature of Current Liabilities

Current liabilities can easily be interpreted to be those falling due within one year from the date of the statement. Hence, every indebtedness, irrespective of its nature, coming under this category will be considered current and as an offset to quick assets.

Any proportion of long-term indebtedness which matures within a year from the date of the statement is included among the current liabilities, in so far as ways and means must be provided to meet this indebtedness in the current period. An illustration of such an item would be an issue of serial bonds, a certain amount maturing each year beginning with a certain date. That proportion of the issue the maturity of which would fall within one year of the statement date, would be included among the current liabilities.

Notes Payable—Banks are investigated to ascertain the extent to which the lines of credit with the various banks have been used. The date of maturity also plays an important part as funds will be needed to pay off the notes when due or arrangements for renewal have to be made. This is sometimes the danger signal. When it is not desirable to renew at the banks, the necessary funds must be provided from other sources and an inspection at date of statement will serve as a forewarning of what action should be taken.

The amount of Accounts Payable outstanding is very interesting as it shows the amount of liquid funds which must be made available for meeting this indebtedness. As with the accounts receivable, the number of months' business outstanding and unpaid at the date of the statement is of particular interest. This is determined by arriving at an average monthly purchase figure and dividing the accounts payable by that amount. Of course, if this figure develops a condition which shows that several months' purchases in excess of time allowed by the terms of purchase, plus a fair leeway, are outstanding, it is cause for further inquiry, and perhaps a detailed examination.

Especially at this time is the item of Acceptances Payable of particular interest. Whenever possible, full details concerning the item are requested to establish what foreign countries, if any, are involved, the nature of the transactions covered, and the form of the financial arrangements, whether under letters of credit and what kind, and if there is any unused portion of the letters of credit outstanding, what the likelihood is of the balance being drawn against in the near future.

Accrued Items are invariably due within a short time of their calculation, and are consequently considered part of the current liabilities.

The amount due to allied, controlled, affiliated, and subsidiary companies is considered a current liability, as the request for the payment, even though not in keeping with the terms under which the money was loaned or the purchase made, would ordinarily be met, especially if the company making the statement was the parent concern. The only question that would arise in this connection is the existence of a written agreement providing for payment some time in the future and more than one year from the date of the statement.

What appears to be an inconsistency is the inclusion of the amount due to allied, controlled, affiliated, and subsidiary companies as a current liability and the inclusion of the amount due from these companies among the invested, fixed, and other assets or the slow assets. The reason for this is that a request for the payment upon the part of a subsidiary company would be immediately met by the parent company, while in case of financial stringency the parent company would be rather lenient in collecting amounts due it from its subsidiary. In other words, when this method of financing companies is resorted to, it is not discernible by an inspection of the balance sheet whether the terms of the agreement under which the debt was contracted have been extended.

Invested, Fixed, and Other Assets

From the viewpoint of the credit analyst, assets grouped as the Invested, Fixed and Other Assets present very many aspects and features common to all. They often raise questions of policy with regard to depreciation, amortization, appreciation, mortgages, ownership, protection, and improvement.

Real Estate, or Land and Buildings, should be shown gross, with the mortgage, if any, as a deduction, or as a separate item among the liabilites if the form illustrated before is used for the report. However stated on the report, the gross value of the assets and the mortgage against it are entered separately on the comparison sheet in order to show the fluctuations from year to year or between accounting periods. The proper amount of insurance should be carried and so reported. Depreciation is also entered separately under the long-term liabilities. These two items, the mortgage and depreciation, form the principal items under the long-term liabilities section of the comparison sheet. The above division of the Real Estate item readily indicates upon the comparison sheet the policy or lack of policy of the concern with regard to depreciation. The amount of depreciation should be adequate. Also, increases should be clearly shown, so as to indicate whether all improvements are capitalized or only the additions; also whether the increase is due to appreciation, and, if so, upon what basis the appreciation was calculated and authorized; whether or not fair and conservative.

Machinery and Fixtures

The item of Machinery and Fixtures is treated on the comparison sheet in very much the same manner as Land and Buildings. The questions raised in regard to Land and Buildings apply just as effectively to this item. Of course, the percentage of depreciation will most likely be higher, and the fluctuations greater from year to year. An additional point, however, is the matter of obsolescence, for which due allowance must be made in the depreciation item. Any mortgage on machinery or fix-

tures would be a chattel mortgage which is not classed with mortgages on buildings Such a mortgage would immediately raise suspicions as to the borrower's financial condition.

Trade-Marks, Patents, and Good-Will are always susceptible to large yearly deductions for depreciation or amortization, and the banker generally looks for such reductions when scanning the item. The worth of these items is in most cases entirely dependent upon the business being a going concern and has little real value to an undertaking in liquidation. Consequently, a conservative policy calls for a reduction of these items and a gradual elimination of them—as much as the business will bear. Good-Will is at best only set up during a change in ownership to represent the intangible values, and is written off as quickly as possible thereafter.

The difference between the totals of the invested, fixed, and other assets and the long-term indebtedness should reflect a sufficient amount of capital investment upon the part of the owners to give assurance of the permanency of the undertaking. The commercial banks, meaning thereby the national banks, ordinarily will not loan funds to be placed in any of these classes of assets for reasons which are obvious in view of the explanations made in connection with the other balance sheet items. The ratio between fixed assets and long-term liabilities is not looked upon as quite so important as the one showing the working position, but it is nevertheless considered important as showing from year to year the relative position of the concern with regard to its permanent assets.

Importance of the Capital Account

The Capital account does not present any special problem, provided sufficient particulars are submitted to permit an intelligent reading of the item. Various ratios are based upon the capital item, viz.: sales to capital to ascertain the capital turnover, which should not be confused with the merchandise turnover heretofore mentioned; capital to fixed assets, to show the

proportion of capital to the total amount so invested; total debt to capital, to show the employment of outside capital and any overextension.

Overextension exists when the capital is exceeded by the debt, and its seriousness depends on the amount so overextended. This condition places the creditors practically in the position of co-owners with the actual proprietors and should always be given prominence in any comments made upon the balance sheet. Some bankers insist upon including with the liabilities any contingent liabilities outstanding and then deducting the total capital investment from this sum. Naturally this method shows a condition very much worse than the first method. It would, however, seem to be unfair and to work a hardship upon some undertakings, which in the very nature of their business must discount acceptances to secure the cash necessary to continue operations, but in their case a greater ratio is allowed. There is, however, a certain unfairness in charging as a contingent liability an acceptance issued under a confirmed or irrevocable letter of credit which has been discounted, unless this fact is taken into consideration and the items of this nature deducted from the total contingent liability.

Contingent and General Reserves

Contingent and general reserves are considered in the nature of surplus set aside for emergencies and listed in the section provided for long-term indebtedness and reserves upon the comparison sheet. Unless a reserve is designated to apply against a specific asset it is considered general, and is the result more often than not of conservative policy, for which it is thought the borrower should not be penalized by including these reserves among the current liabilities. In the final analysis there is little to prevent the management from transferring at any time such a reserve back to the Surplus account.

There is some difference of opinion among bank credit men as to just where, on the comparison sheet, contingent liabilities

should be placed. The form submitted herewith provides a space at the bottom of the sheet clearly marking it as a contingent liability. To the accountant, there does not seem to be any other reasonable handling of this item. However, some credit men prefer the item placed with the current liabilities, claiming that this method will show the worst possible condition. This does not appear to be justified. While the condition shown is very much worse than the actual and the risk of mistakes in granting credit may be reduced, such a condition also makes it possible to err in not granting any credit. Such refusal may lead to just as serious a loss for the bank as the unwise granting of credit. Therefore, the conclusion is that the fairest presentation is the one which recognizes contingent liabilities as they are and treats them accordingly, irrespective of the resulting effect upon the ratios and totals.

The financial statement lends itself to figuring numerous other ratios of more or less value, but the ones of greatest importance are those already mentioned, which are recapitulated here as follows:

Quick Assets to Current Liabilities
Receivables to Merchandise
Capital (Worth) to Fixed Assets
Sales to Receivables
Sales to Merchandise
Sales to Capital
Debt to Capital
Purchases to Payables
Purchases to Merchandise

Analysis of a Corporation Financial Statement

An illustration will now be given of the way in which an analysis for credit purposes is made. The data used will be found in Forms 1 and 2. The first part of the following material shows the type of mental questioning which the analyst puts to himself in regard to each of the several items.

The second part is an opinion based upon the evidence presented and an effort to prove the case with the figures in a slightly different manner than is possible upon the comparison sheet. To give definitely a final opinion requires the absolute knowledge upon the points questioned.

Examination of Separate Items

Cash, $58,055.25. The cash item appears somewhat large in view of the excess of current liabilities. If a good portion of the cash balance were used to reduce, say, notes or accounts payable, the ratio would be bettered to the value of $2 for every dollar so used.

It is admitted that barely 20% of loans is deposited with the loaning banks and that the banks would object to any further reduction of the cash balance if their claims were not first met.

Notes Receivable, $35,000. The circumstances under which these notes were accepted should be ascertained. Is it a custom of the trade or the house, or were the notes taken in settlement of accounts receivable? In case the latter is true, what are the actual terms of sale extended to such customers and why? If notes were taken in settlement of accounts because certain customers were naturally slow pay, can other amounts due from those customers be collected easily? If this method of settlement was granted because of extraordinary circumstances, to what extent would such circumstances affect this class of business? What are the maturities of the notes.

Accounts Receivable, $281,995.05. Sales for the period average about $196,000 per month. The fact that accounts receivable equal only about 1½ times this amount would indicate either a falling off in sales or close collections. In view of the other conditions it seems likely that the first possibility represents the facts more correctly.

In consideration of the above theory the accounts receivable should be aged. Possibly some of these trade accounts are doubtful and not properly classed as quick assets, as in the case of the notes receivable.

Merchandise, $558,740. Is it all in salable condition? How valued? Based upon cost of goods sold, this amount reflects over 3 months' stock on hand.

Notes Payable, $292,050. The conditions upon which these terms were made would necessarily play a part in the analysis. When due? Any renewable? If so, for what period?

Accounts Payable, $490,480.60. Of this amount, $135,000 is payable to officers, directors, stockholders, and employees. What does the item represent? Wages unpaid? Bonuses?

The balance of the account is reflected in the inventory item of $558,740.

Accrued Items, $75,000. A schedule of this item would be interesting. If dividends, how long are these due and outstanding? Is the preferred stock a cumulative issue?

Land and Building—Plants, $375,000.

Machinery, Equipment, and Fixtures, $265,000. When was the last appraisal made, and by whom? What improvements were made in the last year and the cost thereof? What is the significance of mortgage on machinery and equipment? To whom given and when? For what period?

Trade-Marks, Formulas, and Good-Will, $200,000. What is the policy in regard to depreciation or writing down of this figure? Has any amount been written off to date? What is the basis of valuation?

Due from Allied, Controlled, and Subsidiary Companies, $128,974.08. What is the likelihood of this amount being collected, or will these companies require additional financing in the near future? Upon what terms have these amounts been advanced, or are they for merchandise sold to the parent company? (This query does not refer to the $43,974.08 due from Own Selling Houses or Branches.)

Advances, Loans, etc., $103,458.96. Were these advances made to secure raw material? What is the status of these items at the present time? Is the corporation liable to a further payment upon delivery of these goods or materials? If so, to what

extent, and how soon? Does the amount shown as forward purchases represent the entire liability under this head or are these independent of the above?

Deposits of Money: Current Liabilities, $150,000, Long-Term Liabilities, $100,000. Inquiry should be made as to the agreement under which this money is deposited and how urgent is the payment of the amount classed as current. Was the long-term amount left for a term of years by a member of a partnership which the corporation was formed to acquire?

Special Reserve, $60,000. In the absence of any definite qualification, the special reserve is assumed to apply as a general or contingent reserve. Are the reserves for the notes and accounts adequate? It is possible that the item of $14,560.15 covers all the items considered bad or doubtful, which are in that manner eliminated.

General Considerations

The ratio of $.89 shows the corporation to be in a very poor financial condition, though of course not insolvent, as the Capital account still reflects a balance even when the contingent liabilities and forward purchases are taken into consideration. The working capital, however, has been exhausted and $107,000 more.

The main question is one of inventory. Can the stock be moved? If it could be moved provided a loss were taken, how much sacrifice need be made? The entire statement shows that the management has taken quite an optimistic viewpoint, as will be seen from the following figures:

Inventory	$558,000.00
Cash Advances	103,000.00
Forward Purchase	125,000.00
Total	$786,000.00

This total will probably be the inventory figure when all merchandise is received, provided there are no further liabilities in connection with the advances. This amount equals the value

of the cost of goods sold in more than 4½ months—too long a period, in that it does not allow sufficient turnover for adequate profit.

The cost of goods sold for the period under review was \$2,034,530, allowing a gross profit of \$316,140, which the operating expenses alone exceeded. The plant is probably built for volume production, which did not materialize. Consequently a radical curtailment of operations is necessary, provided there will be a saving in the operating expense thereby. This seems likely, as the pay-roll is included in this item, and would be the first to be affected.

The alternative is an aggressive selling campaign for the purpose of disposing not only of the inventory but also of the goods on order and on contract. Decision would be based on the market and selling conditions.

Assuming that the notes and accounts are collectible, the following situation presents itself:

Indebtedness to be met within 3 months:		
Accounts Payable		\$490,480.00
Acceptances Payable		40,000.00
Notes Payable Merchandise		42,050.00
Total		\$572,530.00
Quick assets to meet indebtedness:		
Cash	\$ 58,055.00	
Notes	35,000.00	
Accounts	281,000.00	
Liberty Bonds	6,000.00	
Total		380,055.00
Excess indebtedness to be met by cash sales of merchandise		\$192,475.00

Sales for the period average about \$196,000, but the fact that the heavy inventory item appears on the statement would indicate that these have fallen off considerably, especially in view of the comparatively small amount of accounts receivable outstanding from trade debtors.

The above tabulation does not consider the bank loans which if added to the excess indebtedness above would reach a total of \$442,475, or a somewhat hopeless prospect for the immediate future. It has been assumed the banks would carry the borrowing corporation for a reasonable period until it could extricate itself from its entanglements. This also refers to the Deposits of Money under the head of Current Liabilities.

Capital is generally needed in such a situation and is most difficult to procure. If sufficient capital could be secured to replace the amount of decrease as indicated by the deficit, the debts could be liquidated to a sufficient extent and the corporation again placed in possession of working capital. This seems unlikely as the deposits of money appear to reflect a tendency on the part of interested or related parties not to take any risks in addition to those that may have already been assumed.

The mortgage upon plant does not appear large. This could probably be increased and sufficient capital secured to finance the immediate future if the other methods fail. At least efforts should be made to dispose of the balance of the authorized and unissued first mortgage bonds, as this would set up a slow or long-term liability, the proceeds of which would liquidate a current liability.

In the recent period of deflation resort was often made to the cancellation of contracts for merchandise not already received. This is mentioned here only as a practice that is sometimes resorted to, but it is not for obvious reasons recommended. The statement shows, however, a condition under which cancellations might be attempted to tide over a period of financial stringency. In such a case sellers are sometimes willing to grant the request of the buyer, thereby minimizing their loss, which, as can be readily understood, would be very much greater if the concern failed having on hand their merchandise for which payment had not been made.

The disposal of holdings in the subsidiary companies would not be feasible. The holdings are not sufficient in amount to

play an appreciable part, and sales might be adversely affected if that course were taken. Should, however, these holdings involve an obligation to finance the subsidiary companies the advisability of their disposal might be considered.

It is assumed that the patents, trade-marks, and formulas are essential to the undertaking and could not be sold to secure capital or funds without relinquishing the business.

To summarize: Some or all of the following courses should be decided and acted upon:

1. Sale of inventory at favorable prices and upon short-term agreements.
2. Curtailment of operations in the manufacture of the product.
3. Efforts made to collect outstanding notes and accounts owed to the corporation.
4. Bank loans renewed.
5. New capital secured by sale of stock.
6. Additional mortgage placed upon plant, and remainder of bonds sold.
7. Purchase contracts and agreements canceled or deferred.

CHAPTER III

FOREIGN EXCHANGE ACCOUNTING

By Frederick W. Scholz

I. Introduction and Books of Original Entry

General Considerations

The term "foreign exchange" in its broadest sense may be said to represent the most efficient method of settling mutual obligations arising out of transactions between different nations or the representatives of these nations. In a general way we may classify these transactions as either commercial or banking, and may subdivide these as shown in the following schedule:

1. Commercial transactions:
   - (a) Export trade
   - (b) Import trade
   - (c) Purchase and sale of:
     - (1) Securities
     - (2) Bills of exchange
   - (d) Foreign travel
2. Banking transactions:
   - (a) Investment in foreign securities
   - (b) Use of deposits kept in foreign banks
   - (c) Speculation in exchange
   - (d) Arbitrage
   - (e) Borrowing and lending funds
   - (f) Gold shipments
   - (g) Government business

In all of the above transactions, debit or credit balances are created which must be settled in countries separated from each

other by long distances. Instead of shipping specie or gold bullion to settle these balances, the several parties to the transaction take advantage of the facilities offered by foreign exchange and settle their accounts without using anything but the credits established in the various countries. The institutions and individuals that make possible this mobile settlement between nations are classified as "foreign exchange banks and bankers." Sometimes their main and only business is buying, selling, and dealing in foreign exchange; sometimes, as in the case of certain banking institutions, foreign exchange is only one phase of the general banking business.

It is not the purpose of this chapter to discuss the theory and practice of foreign exchange, with which the reader may become familiar through any good textbook on foreign exchange. On the other hand, the accounting for foreign exchange transactions will be followed out in detail, laying particular stress upon those features peculiar to this important branch of international banking.

Organization

The foreign exchange business is carried on by two classes of institutions, namely, (1) bankers whose principal business is trading in foreign exchange, and (2) banks where this work is carried on by a distinct branch or division of the institution. While the two types may differ as to the treatment of the Capital account on the foreign exchange books, there is no fundamental difference in the accounting methods used, and transactions are treated in the same way by both types. As for the Capital account, however, in the case of the banker engaged exclusively in foreign exchange, the account represents the usual capital investment found in any enterprise, whereas in the case of the foreign exchange division of a bank, the account represents merely an investment of the bank in this department, or, in other words, a loan by the bank to this division, and is shown as an asset on the general books of the bank.

FOREIGN EXCHANGE BANKER'S CAPITAL

	Capital Investment.. $500,000.00

FIRST BANK, FOREIGN EXCHANGE DIVISION CAPITAL

Due from Foreign Exchange Division............$500,000.00	

FOREIGN EXCHANGE DIVISION CAPITAL

	Due to Bank....... $500,000.00

When the bank with a foreign exchange division prepares a consolidated statement of its financial condition, these two items disappear, being interdivision obligations and, therefore, merged in the total of the bank's assets, liabilities, and capital.

The Trader

When we approach the actual transaction in foreign exchange, we find the focal point to be the foreign exchange trader. The "trader," as he is commonly called, is the most important factor in the work of the foreign exchange department. He must be a man of wide experience in foreign exchange transactions, quick to see a favorable turn of the market, ready to take advantage of the rapid fluctuations of the market, and able to follow up his decisions with acts profitable to his firm. The trader has at hand a large number of telephones which connect him by direct wire with the foreign exchange brokers. The latter act as intermediaries between banks or bankers wishing to buy or sell foreign exchange, and also between the merchant exporter or importer and the bank. The broker keeps in constant touch with the market for the different kinds of exchange and is thus able to quote rates of exchange to the bank at any time. However, banks, especially the larger ones, are coming more and more to deal directly with each other; and the exporter or importer also

goes directly to his bank in his foreign exchange dealings instead of employing the broker as a middleman.

We have stated that the trader is the center of all exchange transactions. To facilitate the comparison, let us liken the buying and selling of exchange to the buying and selling of any other commodity. Suppose an American importer owes a bill of goods in francs to a French exporter. He goes to the foreign exchange banker and asks for the exchange rates on Paris for banker's checks. In other words, he wants to know how many dollars it will take to equal the amount in francs which he owes to his French exporter. The banker, to whom the merchant applies for this information, calls up his trader, who obtains the quotation from a broker or else gives the quotation on his own account based on the general market. The merchant then buys a banker's check or sight draft on a French banker, pays as many dollars as the draft is worth in dollars on that date, and sends this foreign bill of exchange to the French exporter in settlement of his debt.

In this case he bought a claim to foreign money, which he turned over to the person to whom it was due. He bought exchange, just as he might have bought a claim to merchandise and received the merchandise in due time. However, the trader had to be consulted for the rate, and it was from this source that the threads originated which eventually end in the books of final entry, the ledgers, and later with many other transactions make up the financial statement. It can safely be said that no purchase or sale of exchange can take place without quoting an exchange rate, and since the trader in well-organized exchange houses is the one who keeps in constant touch with the market for exchange, he must of necessity be drawn into every such transaction. It is for this reason that he may be called the center and pivotal point of the entire foreign exchange business.

Trading Profits

One very important feature depending upon the skill of the trader is his ability to make profits (and also at times suffer

losses) for his house. Profits in foreign exchange are made primarily through buying exchange at a rate lower than that at which it is sold. Sometimes the trader will see an opportunity to buy sterling at a low rate in anticipation of selling it at a higher rate to customers who wish to make remittances to England or who have to buy sterling to meet sterling drafts maturing in the London market. Sometimes the trader sells exchange without having any on hand: in other words, he sells "short," and then has to buy exchange to cover his "short" sale. If he can buy this exchange more cheaply than he previously sold it, he realizes a profit from the transaction.

Let us take another typical case. An American importer, anticipating purchases of goods in England 6 months ahead, goes to his bank and asks the latter to enter into a contract, whereby the bank will furnish him with a sum in sterling of, let us say, £150,000, this money to be at his disposal during the first 5 months of the following year at the rate of £30,000 a month. The trader in this case is selling for future delivery, or dealing in "futures," or "future exchange." He makes a contract with the importer to deliver to him these pounds sterling at the specified time at rates which he must determine now and which are fixed in the contract. Whether the trader will gain or lose on this transaction depends entirely on his experience and skill in reading the market and in being able to foretell with a fair degree of accuracy how the market in sterling exchange will move during the period when this future exchange must be delivered. In a particular instance an American importer who knew very little about exchange bought £150,000 sterling for future delivery during the following 6 months, believing that the market would go up and sterling rates would rise. Unfortunately sterling dropped, as did all exchanges during the early part of 1920, and he suffered a loss of about $45,000, which, of course, represented a profit made by the bank which had contracted to sell this exchange to the importer, since it was able to cover its contract delivery by buying exchange at current market rates. The merchant, on the other hand, had to

pay the contract rates, which in this case were much higher than the market.

Another method by which the trader can make profits is by means of arbitrage transactions. These will be explained in detail later. Let it suffice to say at this point that it takes a shrewd and experienced trader to make profits from arbitrage transactions, especially if he plays a three-cornered game, i.e., if he deals with three different markets at once. Suppose he notes that the rates between Paris and London are more favorable than between New York and Paris or New York and London. He sells dollars to buy francs in Paris; then he sells francs to buy sterling in London; lastly he sells these pounds sterling to buy dollars in New York. He may also keep this sterling, which was bought more cheaply in Paris than it could have been bought in New York and draw cables and drafts against this balance which he has created in the London market.

Finally, there are three other sources of income, which are less dependent on the skill of the trader, namely, (1) income from interest earned by balances kept abroad in correspondents' banks, (2) income from commissions charged customers for services rendered in connection with foreign exchange transactions, and (3) income from discounting of long- or short-term bills of exchange (time bills), bought by the bank in the home market at one discount rate and sent to London or any other foreign market to be rediscounted at a more favorable rate of exchange, the proceeds being used to create a balance against future drawings. These points will be covered later.

Position Sheet

Let us now study the method whereby the trader keeps track of his purchases and sales of exchange, and of his commitments at future dates. It is imperative for him to know at any time during the day whether he has sufficient balances to his credit in foreign banks to meet his drawings, and whether his balances abroad are so heavy that he can afford to sell exchange in order

to reduce them. The record which keeps him informed of these facts is known as the "position sheet," and is shown in Form 1.

POSITION SHEET		
	Long	Short
Sterling		
Paribas		
Bque. Franc Et Ital.		
Soc. Generale		
Banco His. Amer. Madrid		
Banco His. Amer. Barcelona		
Banco de Barcelona, Barc.		
Swiss Check Account		
Swiss Joint Account		
Rott Bhv. Adam		
Ned. Ind. Hdbk.		
Bque. Generale Belge. Ant.		
Brussels		
Lire		
Stockholm		
Kjob. Hdbk. Copenhagen		
Danske Copenhagen		
Christiana		
Direction		
Nordd.		
Lloyds Bk.		
Mend.		
Berliner		
Warburg		
Futures		
Marks		
Vienna		
Prague		
Budapest		

Form 1. Position Sheet

This shows him his position at any time and enables him to strike a balance whenever he wishes. The position sheet may be

called a "daily perpetual inventory of exchange bought and sold." Position sheets differ in detail of design in various banks, but in general they are subdivided into columns, segregated by currencies, with columns for debit and credit balances, or, as they are better known, "long" or "short" positions. If his position is "long," the trader has a debit balance; in other words, he has a balance in his favor at this correspondent bank against which he can draw. If his position is "short," the books show a credit balance, which means that he has drawn more than he has remitted to his correspondent, amounting practically to an overdraft on his balance abroad.

In the morning the position sheet is placed before the trader with his position marked as to every currency in which he deals. This position for each currency is composed of three main groups, namely:

1. The "nostro" balances. These are the balances shown in the "nostro" accounts kept with each individual foreign correspondent and represent the net debit or credit balance after all debits to the accounts (remittances) and all credits to the accounts (drawings) have been entered. Both debits and credits represent not only the actual balances on the books of the foreign correspondent, but also transactions in transit, which, however, have been posted on our books.

2. The spot contracts unexecuted. These are contracts to sell or buy exchange for immediate execution, held over for one or more days.

3. The future contracts. These are commitments entered upon by the traders to buy or sell exchange for future delivery. In the two latter cases details as to time of delivery, tenor, kind of exchange (marks, francs, etc.), and option are given. We might set up the equation as follows:

Nostro Balances + Spot Contracts + Future Contracts = Trader's Position

Daily Transactions

The above information, either in detail or in total for each currency, is given to the trader in the morning and he governs

himself accordingly. As he buys and sells exchange during the day, record is kept of the transactions on sheets called "record of exchange bought" and "record of exchange sold." The totals segregated as to currency are watched and positions prepared of any currency at any time by taking into consideration all purchases and all sales, together with the opening balance, and striking a new balance to reach the new position.

Whenever the trader makes a purchase or a sale of exchange, he prepares a memorandum of the details of the transaction, giving the tenor, amount, rate, time of delivery, and the name of the customer or broker for whom or with whom the deal was made. This so-called "pro forma contract" serves as a basis for the accounting entries required to record the transaction. The trader may be likened to the purchasing agent and also to the selling agent of a commercial house, for he performs the tasks of both, and is instrumental in creating either profits or losses. Thus in the office of the trader are united both the duties of buying and those of selling, the commodity bought and sold being exchange. The exchange having been purchased or sold by the trader, the order is now turned over to the clerical force in the foreign exchange office for further treatment.

Accounting Records

The records maintained in various foreign exchange offices vary greatly as to form and method. Some banking houses still adhere to the old bound book of record, some use the loose-leaf system, and others employ card ledgers. However, they must all have the following fundamental records, even though names and systems may vary in detail.

1. Records of Original Entry:
    - Cable Transfer and Letter Transfer (delegations) Journals
    - Foreign Bankers' Check Registers
    - Foreign Time Draft Registers
    - Exchange Purchase Journals

Exchange Sales Journals
Letter of Credit Records
Acceptance Records
Letters of Advice
Authorization Sheets for Purchases and Sales of Exchange
General Journals
Cash Records
Profit and Loss Journal

2. Records of Final Entry:
Nostro Ledgers
Loro (Vostro, Dollars) Ledgers
Domestic or General Ledgers
Private Ledgers

3. Ultimate Goal:
Profit and Loss Statement
Financial Statement

A typical schedule of balance sheet accounts from which the financial statement is prepared and of the accounts which make up the profit and loss statement is given below. It contains the items most common to foreign exchange banking and trading.

Balance Sheet Accounts

Assets

Foreign Specie
Gold Shipments (Bullion)
Foreign Investments
Advances on Time Bills
Accounts Receivable:
Due for Foreign Exchange Sold
Nostro Interest Claims Receivable
Dollar accounts—debit balances of banks and bankers:
Debit balances other than banks and bankers
Nostro accounts—balances due from foreign banks and bankers (balances in foreign banks)

Acceptances Purchased:
- Own
- Commercial
- Bankers'

Accrued Interest Receivable on Loans and Overdrafts

Customers' Liability:
- On Acceptances
- Under Travelers' Letters of Credit
- Under Commercial Letters of Credit

Bills of Exchange Discounted

Liabilities

Deposit Accounts:
- Foreign Accounts
- Deposits Reserved Against Bills of Exchange
- Deposits Against Travelers' Letters of Credit Issued

Travelers' Checks Outstanding
Commercial Letter of Credit Deposits
Long Drafts on Foreign Correspondents
Nostro Accounts—Overdrafts
Unpresented Foreign Drafts
Dollar Drafts Drawn
Accrued Interest Payable
Due for Foreign Exchange Bought
Acceptances Due but not Presented

Our Acceptances:
- Domestic and Foreign Shipments
- Under Commercial Letters of Credit (export and import credit)
- By Foreign Correspondents for Our Account

Bills of Exchange Rediscounted
Capital Account

PROFIT AND LOSS ACCOUNTS

Debit Interest and Discount
Credit Interest and Discount

Cable Expenses
Brokerage
Guilder, Franc, Mark, Sterling Accounts
Commissions:
  Travelers' Letters of Credit
  Commercial Letters of Credit
  Dollar Accounts
  Long Drafts
  Acceptances
Earnings on Foreign Investments
Bullion Trading
Foreign Money Currency
Insurance Earnings
Interest on:
  Capital
  Dollar Deposits
  Nostro Accounts

As the subject of foreign exchange transactions is developed, these accounting records and forms and the various ledger accounts employed will be explained in detail.

Foreign Specie

Large banks having foreign exchange departments and some foreign exchange houses dealing principally with travelers to foreign countries usually keep on hand currency of different foreign countries, which they sell to travelers who expect to go abroad and who wish to be supplied with the currency of that country. Any difference between the price paid by the bank for this currency and the selling price to the customer is entered in the Foreign Money Currency account, which records the profits or losses on these transactions. This currency, i.e., foreign species, should be treated exactly like cash. Its valuation at the time the financial statement is prepared will depend upon the market rate for foreign money at the date of the statement. As with other investments, the house has the option of depreciating the currency down to

the market, when the latter is lower than cost, or of appending a footnote showing what the market value is at the date of the statement.

Gold Shipments (Bullion)

At certain times it becomes necessary for a country to reduce its liability to another country arising from imports by shipping gold bullion to the creditor nation. For example, France has bought large quantities of raw products from American exporters, and ships bullion to an American bank to be used in liquidating the debts due American merchants. Again, an English house expects to make large purchases of securities in this country and will require a large credit balance in its favor. The English bank may ship gold bullion to an American bank to be used in creating a dollar balance on the books of the American bank. To handle this transaction the Gold Shipments account is used. As the foreign bank wishes to have the proceeds of the sale of bullion for its account placed upon the American banker's books as a deposit account, the Gold Shipments account is debited with the estimated value of the bullion and the correspondent's account is credited on the American banker's books as follows:

Gold Shipments..................................	$......	
London and Midland Bank Deposit...........		$......
To charge Gold Shipments account and credit deposit account with estimated value of gold shipment.		

The gold is then sent to the United States Assay Office for assaying and when the real value is known, adjustment entries are made to these accounts in order to credit the correspondent with the full amount of the proceeds of the disposal of the bullion. There remains the task of clearing the Gold Shipments account of the bullion and finishing the transaction. This is done, if the bullion is sold by the American banker for his correspondent, by crediting the Gold Shipments account and debiting Cash as follows:

Cash	$......	
Gold Shipments		$......
To clear Gold Shipments account through sale of gold received for account of foreign correspondent.		

There remain on the books of the American banker the asset, cash, received for the gold, and the liability to the foreign correspondent, against which the latter can draw bills of exchange or issue cable payments.

Foreign Investments

Just as American business men invest their money in stocks and bonds issued by American corporations, so they may also invest money in foreign corporations. These investments are treated the same as any other securities and require no comment. When the actual certificates are kept abroad by correspondent bankers or depositories, there are two methods open to the American banker to collect the dividends or interest earned. In the case of interest, where he knows the exact amount, he can either draw on his correspondent for the amount, crediting the deposit account which he maintains abroad with his correspondent, or he can notify his correspondent that a certain sum of interest falls due on a certain date, and that he is debiting the correspondent's account with the amount, assuming the collection of the interest at the proper date. In the first instance we must assume that the correspondent has credited the American banker's account with the interest earned, thereby increasing the latter's balance against which he may draw his draft. This action on the part of the foreign correspondent is equivalent to sending a remittance for the amount to his American correspondent, except that no remittance is actually sent, but merely a credit entered on the books of account.

The entries passed might be as follows: The English correspondent when receiving the interest earned by securities belonging to an American investor enters:

Cash.. £......
    American Banker's Deposit.................. £......
        To charge Cash for interest received on securities for account of American banker and credit his account with same.

The American banker when receiving the letter of advice that the interest earned has been credited to his deposit account enters:

English Banker's Deposit...........................$......
    Earnings on Foreign Investments.............. $......
        To charge English banker with the interest due on securities held abroad and credit income account with same.

Both entries show both pounds sterling in the foreign money column and American dollar equivalents in the dollar column. Then, if the American banker wishes to draw against this account he can draw a sterling draft and sell it to a customer, debiting Cash for the money received from the sale of the draft and crediting his correspondent with the payment of the draft when presented.

Advances on Time Bills

Another type of investment frequently made by foreign exchange bankers is the purchase of long-term bills of exchange in the American market and their transmittal to foreign money centers either for rediscount or for holding until maturity. A banker may purchase 30, 60, or 90-day time drafts or acceptances in the home market at an attractive discount. In this case the investment account is debited with the bills of exchange and Cash and Purchase Discount on Bills Receivable are credited.

Advances on Time Bills (Sterling and Dollars)....... $......
    Cash................................... $......
    Purchase Discount on Bills Receivable........ ......
        To set up investment in long-term bills of exchange and record the cash paid and discount earned on the purchase.

The bills of exchange may then be sent to the London correspondent with instructions either to hold until maturity or to rediscount at once in the London market. In both cases the deposit account of the American banker is credited by the London banker with the proceeds from the collection or sale of the bills of exchange, thus building up the credit balance of the American banker, against which he may draw drafts or issue cable payments. The American banker will receive a letter of advice in due time informing him that the bills have been collected and will debit the account of his correspondent with the pounds sterling and the dollar amount, depending on the market rate at the time of collection or of discount.

Exchange Sales (Accounts Receivable)

If we keep in mind that the selling of exchange is merely the sale of a special commodity, much of the apparent mystery of foreign exchange transactions will disappear. Aside from the sale of drafts connected with letters of credit and importing or exporting, the banker will generally sell either a cable, a delegation, or a check to a customer. The client may have payments to make in a foreign country; he may wish to create a balance in a foreign bank to be used in future business transactions; or he may wish to send money to a relative living abroad. Whatever his reasons may be, he will telephone, write, or communicate in some other way with the foreign exchange banker directly or through his broker for the purpose of buying exchange. Let us follow the three types of operation—cable, delegation, and check—through the various stages until they reach the ledger.

Dealing with the Customer (Cables)

Let us assume that the Jones Chemical Company wishes to create a credit in a London bank amounting to £50,000 and buys a cable amounting to that amount from a foreign exchange banker. The Jones Company, being a customer of the banker,

will not have to pay cash at once for the cable, but will be allowed a certain time to make payment. As soon as the order for the cable has been received a confirmation is sent to the purchaser, confirming the amount, rate, brokerage, commission, dollar equivalent due from the purchaser, payee abroad, and foreign bank or correspondent through whom payment is effected. The

THE FOREIGN EXCHANGE BANK

NEW YORK,

TO

WE HAVE SOLD YOU THE FOLLOWING EXCHANGE PAYABLE THROUGH

		AMOUNT	RATE	DOLLARS
	TO BE PAID BY CABLE TO			
	CABLE CHARGES			

N.B. Please examine this bill carefully.
We decline all responsibility for correct payment of cable transfers that are not duly confirmed in writing.
In making a cable transfer it is fully understood and agreed that no liability shall attach to us nor to our correspondent for any loss or damage in consequence of any delay or mistake in transmitting the message, or for any cause beyond our control.
In case of the non-delivery of the dispatch, payment will be made on receipt of our letter to our correspondent confirming the order.

Form 2. Bill for Sale of Cable Exchange

sales order, usually in duplicate, then goes to another department where a bill (Form 2) is made out in duplicate or triplicate, the original being sent to the customer and the copies retained in the office. One of these copies goes to the foreign exchange cashier who keeps it in the unpaid bill file until payment is received, when it is transferred to the paid bill file.

Before the foreign exchange banker assumes the risk, however, of cabling to his correspondent, or, in the case of checks, of issuing checks against his balance abroad, someone in authority must pass on the propriety of the sales transaction about to be consummated. This may be one of the executives of the bank or one of the partners of a firm of bankers. The best name given to these statistical records is "authorization sheets." The specimen

shown in Form 3 is for both exchange sold and exchange bought. The dollar amount column as well as the foreign currency columns have only approximate values, as the purpose of these sheets is simply to keep the executive posted as to the various sales and

SOLD							
Dollar Amount		£	Fcs.	Mks.	Misc.	PURCHASER	Partner Approved by
	.						

BOUGHT						
Amount		Terms	Drawer	Drawee	Dollars Afloat	Partner Approved by

Form 3. Authorization Sheets for Exchange Sold and Bought

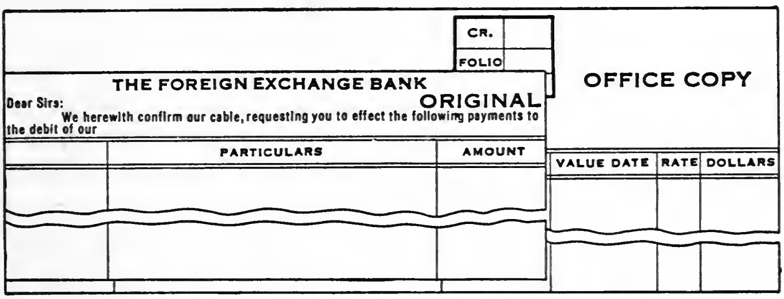
purchases to enable him to control the amounts involved, and to prevent losses, especially on the sales side, through entering into contracts for the delivery of exchange for the account of clients who may not be good risks.

Dealing with the Foreign Correspondent (Cables)

The cable is now entered in a cable record, in either bound or loose-leaf form, which will be used later to check the letter of advice of payment executed sent to the American banker by his correspondent abroad. This cable record, which is also for statistical and auditing purposes, contains the currency and amount of the cable, value date, or probable date of arrival of the cable abroad, correspondent on whom the cable is drawn, payee to whom payment is to be made, and the party for whose account the cable is issued in this country. Meanwhile the

cable has been translated into the code used by the banker and sent off.

As the day's business goes forward numbers of cables are sold to be drawn on the various correspondents and these must all be confirmed by mail to the correspondent. It often happens that a cable is mutilated in transmittal and a mail confirmation, while powerless to stop the original payment, may help to straighten out differences. The cables having been summarized according to correspondents are confirmed on a form similar to that shown in Form 4.



Form 4. Cable Confirmation Sent to Correspondent

The confirmation, which acts as a letter of advice, contains in the column marked "Particulars" the name of the party to whom payment is to be made and the party for whose account the payment is effected. The value date is the date on which the trader assumes the cable will reach the correspondent and consequently when payment will be effected, since the cable is payable upon receipt and deciphering from its code language. In normal times traders will not err very much in their estimate of time, a very important matter, as interest adjustment becomes necessary if there is any difference in days between the estimated and the actual dates of payment. Suppose the banker estimates that a cable will be paid on the 6th of the month, but through some delay, payment is not effected until the 8th of the month. He has had 2 more days' interest accruing on his balance abroad

which is a profit to him, as the rate which he quoted to the purchaser of his cable in New York assumed the loss of interest on the amount of the cable beginning with the 6th of the month and not the 8th. Had he known that the cable would be delayed he could have quoted a lower cable rate, as he would have taken into consideration the 2 days during which he had the use of the balance with his correspondent.

Recording the Sales Transactions (Cables)

The sale of cable exchange is now ready to be entered in the foreign exchange sales journal, a specimen page of which is shown in Form 5. A specimen page of a typical foreign exchange purchase journal is shown in Form 6. The column marked "Number" may have either the number of the cable, the delegation, the check issued, or the number of the transaction, depending on the office system employed. Under Particulars in the sales journal the purchaser and in the purchase journal the seller of the exchange is given. In the case of exchange sales the names given in this column constitute the so-called "accounts receivable" against which the claim for the sale of exchange is recorded and to which the bill is sent. The amount column in both cases is for foreign currency which may be summarized in the total column. This latter is desirable where a total is made up of numerous individual items. The columns, Rate—Dollars—As Billed, for exchange sales, and Rate—Dollars—As Bought, for exchange purchases refer to the customer from whom the exchange was bought or to whom it was sold. The column, As Advised, refers to the correspondent's account to whom the cable was sent or on whom it was drawn. Account Credited and Account Debited always refer to the correspondent's account to which the transaction will be posted. The brokerage is the amount earned or expended and is credited or charged in total to the Brokerage account.

Considering for the moment only exchange sold, the debits and credits of a transaction may be expressed as follows:

FOREIGN EXCHANGE SALES JOURNAL

DATE

NUMBER	PARTICULARS	AMOUNT	TOTAL	AS BILLED		AS ADVISED		ACCOUNT CREDITED	BROKERAGE	
				RATE	DOLLARS	RATE	DOLLARS			

Form 5. *Foreign Exchange Sales Journal*

FOREIGN EXCHANGE PURCHASE JOURNAL

DATE

REMITT-ANCE NUMBER	TENOR	PARTICULARS	AMOUNT	TOTAL	AS BOUGHT		AS ADVISED		ACCOUNT DEBITED	BROKERAGE	
					RATE	DOLLARS	RATE	DOLLARS			

Form 6. *Foreign Exchange Purchase Journal*

Due for Foreign Exchange Sold (Exchange Sales).....	$......	
Foreign Correspondent's (Nostro) Account.....		$......
Brokerage..............................		......
To charge accounts receivable with amounts due us for exchange sold and to credit the foreign correspondent's account (nostro) with payments to be made by him and to set up the brokerage liability incurred.		

It must be remembered that the Exchange Sales account Due for Foreign Exchange Sold and the Brokerage account have dollar amounts only, while the correspondent's account has both foreign units and dollars.

At the end of the day the total of the dollars column, As Billed, will be debited to the controlling account, Exchange Sales, and the items in the dollars column, As Advised, credited individually to the proper foreign correspondents' accounts. Taken in conjunction with the total brokerage posting, this total can be used to prove the correctness of the aggregate of amounts debited to the customers' accounts. Brokerage is, of course, also posted in summary at the end of the day. These accounts receivable must not be thought of as running the length of time customary with commercial accounts, as settlements in foreign exchange are made within a very short period and most of the business is settled through immediate payment by check or cash. Consequently the so-called "accounts receivable" are only temporary items to be cleared off within a few days by cash receipts.

Both the Exchange Sales and the Exchange Purchase accounts are summary accounts, serving both as controlling and as clearing accounts. Neither one, however, enters directly into the Profit and Loss account, but under normal conditions both should clear or balance. The method of clearing the Exchange Sales account is as follows: Since we now have a debit balance in a sales account, contrary to the usual accounting practice, this debit must be removed or "cleared." The claims against customers for the sale of exchange to them, as shown in the exchange sales

journal under Dollars—Rate—As Billed, will be settled by the checks remitted by them, leading to the following entry in the books:

Cash..	\$......	
Exchange Sales..............................		\$......

This entry serves a twofold aim. It substitutes the asset, cash, for the asset, claim against customers for exchange sold, and by the credit to Exchange Sales it clears that account, leaving as the final record the asset, cash, against which stands the credit to the foreign correspondent for making payment out of the funds in his hands belonging to the local banker. To clear the books entirely and wipe out the brokerage liability due other brokers, credit Cash and debit the brokerage account for the payment of this liability.

The handling of foreign exchange purchases is exactly the same as exchange sales, except that the entries are reversed, being first a credit to Exchange Purchases, expressing the banker's liability, and a debit to the foreign correspondent's account for remittances of cables or drafts to him. When the banker pays out the cash for his purchases of exchange, he debits the Exchange Purchases account, clearing it and wiping out his liability, and credits Cash for the payments made.

Nostro Interest Claims Receivable

This account records the interest claims against foreign correspondents for interest arising out of delayed payments on the part of the correspondent. For example, a banker sells a cable to a customer on September 24, which he estimates will be paid by his foreign correspondent in London on the 26th. In figuring the interest which he receives from the correspondent on the balances in the latter's hands, he takes account of the balance to his credit up to the 26th and then figures interest on his new balance as reduced on that date by the amount of the cable. If the delivery of the cable, and therefore its payment, are delayed for some

reason and the advice received from the correspondent shows that the amount was paid out on the 29th, the banker will be entitled to a 3 days' interest on the amount of the cable payment, which the banker deducted when figuring the interest on his balances abroad. The banker may either debit his correspondent's account with the claim for interest and credit his interest account, or if there is any doubt of the correctness of the claim, he may debit a special account, such as Nostro Interest Claims Receivable, and leave it there until the claim is definitely settled.

Nostro Accounts

The largest portion of the so-called "accounts receivable" in foreign exchange is found in the nostro accounts, which represent the deposit accounts kept by the foreign exchange banker in foreign countries. These items will usually be shown on financial statements under headings such as Due Us from Foreign Banks and Bankers or Due Us on Nostro Accounts. The foreign exchange business still retains many expressions that point to its Italian origin, and nostro accounts as well as the opposite, "loro" or "vostro" accounts belong to this category. Nostro (our) accounts simply mean the balances which we keep with banks or bankers in foreign countries, against which we draw as the need arises. There is no real difference between the New York banker keeping a deposit account in a Philadelphia bank and the same banker keeping a deposit account in a London or Paris bank, except that he must keep track of the transactions with the foreign bank in both American and foreign units, owing to the difference in currency between the United States and the foreign country. Just as the banker charges his Philadelphia bank account with all deposits, and credits it with all withdrawals, so he charges the nostro account with all remittances and credits it with all drawings. The various foreign banks and bankers are commonly called "correspondents," their accounts being divided into nostro and loro accounts, usually kept in different ledgers.

The transactions that find their way most frequently into the nostro accounts are:

1. Nostro Accounts Debits:
   - Remittances by cable for customers' accounts.
   - Remittances by cable (cable transfers) for our own account to increase the credit balance abroad.
   - Remittances by check or time draft for customers' or our own account.
2. Nostro Accounts Credits:
   - Cable drawings or cable payments for customers' or our own account.
   - Letter payments or delegations for customers' accounts.
   - Check or time draft payments for our own or customers' accounts.

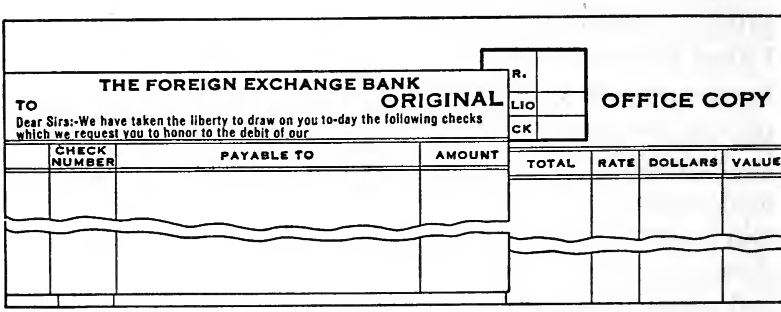
Letter Payments or Delegations

The recording of the sale of a letter payment or delegation is somewhat similar to that of a cable. A letter payment is an order upon a foreign correspondent to pay money to a certain person for the account of another person in this country. The delegation is sold by the American banker to his customer in the United States at a lower rate than the cable, because the banker has the use of his credit balance abroad, drawing interest, until the time when the letter of delegation requesting payment reaches its destination abroad, which is as long as the mail steamer and mail transportation take. The rate at which the delegation is sold is about the same as that for bankers' checks. The use of delegations to pay over foreign money abroad, usually for private and personal payments, less commonly for commercial settlements, is due to their greater simplicity and the likelihood that the foreign beneficiary of the delegation may not be familiar with the use of bankers' checks. As in the case of cables, letters of advice, as previously shown, are sent to the foreign correspondent, giving the details necessary for making the payments.

Bankers' Checks

A large volume of business in sales of exchange is done through the medium of bankers' checks, or sight bills of exchange, drawn by the American banker on his correspondent abroad. These bills of exchange, or bankers' checks, are sight drafts drawn in foreign currency—pounds sterling, francs, marks, guilders, etc.—on the foreign correspondent and charged by the latter against the money balance which the American banker maintains abroad. The checks are drawn in duplicate, called "first of exchange" and "second of exchange," and are sent off by different steamers. Whichever check is first presented to the correspondent is paid. Under normal conditions the original check is presented first and paid, the duplicate thereby being rendered void. Care must be taken by the correspondent not to pay the same check twice, and the American banker likewise must be careful in controlling and watching the letters of advice received from his correspondents so as not to be charged twice for the same check. In general, no trouble is experienced with duplicate foreign checks.

As a rule the letter of advice sent to the correspondent, as shown in Form 7, contains a number of checks which have been



Form 7. Letter of Advice for Drafts Drawn on Correspondent

drawn on the correspondent. Note that the letter of advice here illustrated permits two records to be made at once by the use of carbon copies, the short copy, containing check number, beneficiary, and amount in foreign currency, being sent to the

correspondent, the long copy with the additional information as to rate, dollars, and value date, being used for the office copy and for posting. Other systems are also used. Where the old-style stub check book is still in use, an entry is made in the exchange sales journal to record the sale of the exchange, and in a draft record book to help locate the draft later. In the case here shown the retained copy serves as a sales record, the totals of the various days being transferred to a recapitulation sheet and posted in total to the Exchange Sales account along with cable and delegation sales of exchange.

II. Ledgers and Accounts

Ledgers

Ledger Records. In general we find three types of foreign exchange ledgers in use: (1) the nostro (our accounts) ledgers, in which are recorded the transactions with balances which we maintain with our foreign correspondent; (2) the vostro, or loro (their accounts), ledgers, in which are recorded the transactions with the balances maintained by the correspondents with the American banker; and (3) the general ledger, often called "domestic" ledger, in which are kept controlling accounts, general accounts, foreign exchange accounts of a general nature, accounts with customers in this country, and most of the income and expense accounts. There may also be a private ledger containing the Capital account, certain private accounts, and the Profit and Loss summary account. This, however, is not peculiar to foreign exchange.

Nostro Ledgers. The nostro accounts must be kept both in foreign units and in American dollars. The foreign currency record must be kept in order to keep track of the fluctuations in the balances kept abroad and to control the accuracy of charges and credits by the correspondent resulting from the various transactions. The dollar values must be maintained for trial balance and balance sheet purposes and for figuring the profits or losses from exchange transactions.

The information necessary to record nostro transactions properly is the following: date of the transaction, particulars, i.e., name of customer for whom the transaction was executed or the name of party abroad to whom payment is to be made, foreign currency amount transmitted or drawn, value date as estimated by the trader, value date as advised by the correspondent, record of part payments and of totals of payments depending on the nature of the transaction, and finally the dollar amounts involved. There are as many different arrangements of the above information as there are foreign exchange offices. Two forms of nostro accounts are given, one making entries by hand, the other making use of bookkeeping machines. These merely illustrate the general idea of nostro accounts and must not be taken as setting a standard followed by all banks.

Form 8a has spaces for all of the above information, as well as the following data:

Numbers. Office record of the number of the transaction.

Date of Confirmation. This gives the date when the transaction was confirmed by letter of advice from the correspondent.

Value. Value date from which interest on new balance must be figured, which is the date of payment of the draft or cable or the date of receipt of the remittance. This date should agree with the preliminary value date as estimated by the trader and placed in a special column or filled in with pencil in the Value Date column, to be later inked in when this or another date is confirmed by the correspondent.

Charges. Often there are cable charges paid by the correspondent, or special messenger service, or other special charges which will be taken from the letter of advice sent by the correspondent and credited here.

Foreign Amount in Detail. Quite frequently a large amount may be drawn, but payable only at various intervals. For example, an American importer may buy a cable of £100,000 to be paid at intervals of one month at the rate of £20,000 to different payees. The different amounts of £20,000 would go in this

Date	DESCRIPTION	Numbers	Date of Confir-mation	Value	Charges	Foreign Amount in Detail	Recon-cilement Check	Foreign Amount in Total	Memorandums	U.S. Currency

Form 8. (a) Nostro Ledger Account for Hand Entry (credit side similar)

IN ACCOUNT WITH
ADDRESS

	OLD BALANCE	FOLIO	DATE	PARTICULARS	VALUE DATE	$ DEBIT	$ CREDIT	DAILY BALANCE	DR. FOREIGN AMOUNT		VALUE	CR. FOREIGN AMOUNT		
									Preliminary	Final		Final	Preliminary	
1														1
2														2
3														3
4														4

Form 8. (b) Nostro Ledger Account for Machine Entry

column, and the total amount in the column, Foreign Amount in Total.

Reconcilement Check. At stated periods, either monthly, quarterly, or semiannually, foreign correspondents send to the American banker statements of the status of the deposit account showing transactions and balances, while the latter does the same with his vostro accounts for the foreign correspondents. The staff of the exchange banker must reconcile the statement received from the correspondent with the ledger account in the nostro ledger, so that the check "tick" and usually the initial letter of the month in which the transaction appeared in the correspondent's statement are placed in this column.

The other columns are self-explanatory.

Form 8b offers about the same details as to columns, except that here a daily balance is carried, enabling the trial balance to be taken off at any time.

Old Balance. This is always the starting balance for the machine and acts as a proof for the last previous balance appearing in the column, Daily Balance. For example, if on January 6, the daily balance was $25,500, then the next line in the Old Balance column should show the same amount, $25,500, thus proving that the bookkeeper on the next day of entry, which may be January 10, picked up the right balance from the Daily Balance column.

Preliminary. This column under Debit Foreign Amount and Credit Foreign Amount is equivalent to the column, Foreign Amount in Detail, explained above. There is another use for it, however, which is more important. It often happens that the American banker instructs his correspondent to make payments to which will be added certain charges, the amount of which is not known to the American banker. In this form of ledger, which has no special column for such charges, the amount as drawn and advised is entered in the Preliminary column and the final amount, including the charges as advised back by the correspondent, is entered in the final foreign currency column.

Value Date. This column is used to enter the value date as estimated by the trader and as advised to the foreign correspondent by the bank and takes the place of the pencil notation used in the previous form.

Value. This column is used to enter the value date as advised by the correspondent in his letter of advice.

No special column is here provided for the reconcilement check.

The entries in the nostro ledgers may be summarized as follows:

Nostro Accounts—Foreign Correspondent

Remittances by cable or draft	Drawings of cables, delegations, and checks
Payments by banker for his own account	Payments by correspondent for banker's account
Purchases by banker for his account	Sales by correspondent for banker's account
Collections by correspondent for banker's account	Interest adjustments due the correspondent on balances
Interest claims due the banker on balances	Correspondent's share of profits (if joint account)
Banker's share of profits (if joint account)	

After the individual debit or credit entries have been made in the correspondent's nostro account, showing both foreign currency and dollar equivalents, nothing can be done until confirmation of the transaction is received from the correspondent. After a certain lapse of time, depending on the mail service between the countries, a letter will be received from the foreign correspondent, stating that in accordance with the cable or check received from the American banker payment was made on a certain date by the foreign banker to the party specified. This letter of advice is checked in detail against the copy of the letter of advice originally sent to the correspondent at the time of the transaction. If the payee, amount paid, value date, and other details agree with the original advice, the letter is marked "Cor-

rect" and passed on to the bookkeeper. The latter then compares the details in the advice with the ledger entry made at the time the transaction occurred, enters the final value date in the proper ledger column as well as any charges, or, in the case of Form 8b, enters the final foreign currency amount in the proper column. The letter of advice is then ready to be filed.

Reconciliation of Accounts

At the end of the month or quarter a statement is received from the correspondent, giving the various balances after remittances have been credited and drawings charged by him to the American banker's deposit account. His statement is accompanied by a schedule showing the daily balances and the debit and credit interest charges against them and the final interest figure which agrees with that in the statement. These figures are, of course, all in foreign currency units, as the correspondent is not interested in the banker's dollar amounts. Obviously the nostro account in the American banker's ledger is a loro account in the correspondent's ledger.

On American Banker's Books	On Correspondent's Books
Our Balances with Correspondent	
Nostro accounts in foreign currency and American dollars (our trial balance in American currency)	Loro accounts in foreign currency only
His Balances with Us	
Loro accounts in American dollars only	Nostro accounts in American dollars and foreign currency (his trial balance in foreign currency)

It should be remembered that the balance which he shows to our credit in foreign currency (sterling) will differ from the sterling balance which the American banker's nostro account shows in our favor, as there will be drawings and remittances made and recorded on this side, which arrived abroad too late to

be paid or entered on the books at the date of the statement. It therefore becomes necessary to reconcile the foreign correspondent's statement with the American banker's books and to that end the reconciliation form shown in Form 9 can be used.

It will be noted that four different types of adjustment are necessary to effect a reconciliation. It is immaterial whether we begin with our book balance and end with the correspondent's statement balance, or whether we begin with his balance and end with our book balance. The principle is the same in either case. The statement must be checked with the nostro account item for item both as to details, amounts, and value dates, the best method being to place a tick and the initial of the month in which the item appeared on the correspondent's statement next to the item in our ledger account. This helps to locate at a future date items that may be open to question.

Exchange Purchases

While little has been said about transactions such as purchases of cables, time drafts, acceptances by an American banker for remittance to his foreign correspondent, the proceeds to be placed to the credit of the American banker's deposit account abroad, it is obvious that these transactions follow the same line of reasoning as the ones discussed in the preceding sections, except that the debit and credit entries are the reverse of the former ones dealing with the sale of exchange. Where in the above entries a credit note was sent to the foreign correspondent, crediting his account for payments made, in the present case a debit note is sent, debiting his account for remittances sent.

The two forms here shown (Forms 10a and b) are sent with remittances of long-time drafts, bought by the American banker in the home market for discount abroad or to be presented to bankers abroad for acceptance, and the proceeds credited to the American banker's deposit account. In these instances the nostro account of the foreign correspondent is debited in his nostro ledger by the American banker, thus building up his balance abroad.

RECONCILEMENT OF ______________________

______________ ACCOUNT ______________
(DATE)

DATE	NO.	PARTICULARS	CH'K	AMOUNT	DATE	NO.	PARTICULARS	CH'K	AMOUNT
		CREDIT FOOTING, PER OUR LEDGER					DEBIT FOOTING, PER OUR LEDGER		
		CREDIT ITEMS, CHECKED AFTER					DEBIT ITEMS, CHECKED AFTER		
		WE DEBIT, THEY DO NOT CREDIT					WE CREDIT, THEY DO NOT DEBIT		
		THEY DEBIT, WE DO NOT CREDIT					THEY CREDIT, WE DO NOT DEBIT		
		BALANCE TO OUR CREDIT, PER THEIR STATEMENT					OUR OVERDRAFT, PER THEIR STATEMENT		

Form 9. *Reconciliation Form for Foreign Accounts*

OFFICE COPY

DR.	
FOLIO	
CHECK	

NEW YORK ORIGINAL

Dear Sirs:

You will receive on

as per specifications below, which please pass to the credit of our account

Very truly yours,

THE FOREIGN EXCHANGE BANK

NO.	TENOR	DRAWER	DRAWEE	AMOUNT

UNT	RATE	DOLLARS	VALUE

Form 10. (*a*) *Debit Note Form to Foreign Correspondent for Discount*

DEAR SIRS:

WE TAKE THE LIBERTY OF SENDING YOU THE REMITTANCES SPECIFIED BELOW, WHICH PLEASE HAVE ACCEPTED AND

ADVISING US OF THE DUE DATE.

THANKING YOU IN ANTICIPATION, WE REMAIN.

VERY TRULY YOURS.

THE FOREIGN EXCHANGE BANK

PLEASE ADVISE US IN CASE THE ABOVE REMITTANCE (S) HAS (HAVE) BEEN ACCEPTED WITH A DELAY, MENTIONING REASON IF POSSIBLE.

NO.	TENOR	DRAWER	DRAWEE	AMOUNT

Form 10. (*b*) *Debit Note Form to Foreign Correspondent for Acceptance*

Steamer Proof

An expression peculiar to foreign exchange is "proving the steamer." When foreign exchange has been sold, the various bankers' checks, time bills of exchange, and letters of advice are collected and segregated by steamers sailing to the ports of the countries on which the exchange is drawn. The "steamer proof" is merely an internal check which can be applied to see whether the cash received for sales of exchange and the cash to be expected agree with the total of foreign exchange sales. As the exchange is sent out by a certain steamer this makes a good date for checking and gives an effective internal proof. We have learned that a bill is made out to the customer to whom the exchange was sold and that a duplicate of this bill is given to the foreign exchange cashier, who files it until the customer remits. When the customer remits the cash, the cashier removes the bill from the unpaid file and sends it to the paid file. When proving the amount of unpaid duplicate bills in his file, the total should equal the debit balance remaining in the Exchange Sales account, which equals the "steamer." We may set up the equation as follows:

Credit Side of Exchange Sales + Unpaid Bills (Steamer) = Debit Side of Exchange Sales

Joint and Arbitrage Accounts

Two accounts frequently found in nostro ledgers are the Joint account and the Arbitrage account. The Joint account represents a joint venture in which the profits or losses are shared in a certain proportion, perhaps 50-50 by the parties. For example, an American banker may enter into an agreement with an English banker that all transactions between the two houses dealing with foreign exchange are to be on a 50 per cent profit-sharing basis. This does not in any way change the operations of the traders or the workings of the accounting system. It simply means that all transactions coming within the joint venture will be recorded in a special Foreign Exchange joint account in the nostro ledger. When the American banker figures his profits he

credits his foreign correspondent with the latter's half of the same. In a like manner the English banker will credit his American correspondent with the half of the profits made by the former in the London market, so that in due course the American banker may debit the foreign correspondent in the Joint account with the profits made under the joint agreement by the foreign banker.

The Arbitrage account is based on the so-called "arbitrage transactions" in which the trader engages. Arbitrage may be briefly explained as follows: The American trader notes that English pounds sterling sell at a higher rate in the New York market than they do in the Paris market. In order to take advantage of this more favorable rate between London and Paris (disparity of rates) he buys the sterling in Paris instead of in New York. The entry for this transaction in the nostro ledger would be as follows:

Arbitrage—London correspondent, £ 10,000 at $3.75	$37,500.00	
Arbitrage—Paris correspondent with equivalent amount in francs, depending on rate of exchange between London and Paris		$37,500.00

Note that while the amounts in foreign currency differ, owing to the different units and rates of exchange, the American dollars are the same, since we merely use a given number of dollars to buy sterling in Paris instead of in New York. In effect, the American banker has drawn francs on his French banker and increased his sterling balance with his London banker.

He now has £10,000 in his London bank, purchased at a low rate through Paris, against which he can draw in New York, by selling exchange in New York at the higher New York rate, thus making a profit. Arbitrage may be between two or more points in various countries and requires a skilful trader and rapid manipulation to be successful. It may be likened to a circle, since the American banker begins by expending dollars to buy foreign

exchange in a foreign market, and ends by receiving dollars from his American customers through the sale of exchange to them at a higher rate than that at which he bought it. Where arbitrage is carried on only infrequently, the transactions can be recorded in the regular nostro correspondents' accounts, but where they occur in large numbers it is better to keep them in separate arbitrage accounts, sometimes called "duo" or "trio" accounts, depending upon whether two or three money centers are involved.

Loro Accounts

There is a second class of balances maintained by the foreign banker in this country, called "dollar" balances, which bear exactly the same relation to the foreign banker that our foreign deposits bear to the American banker. In other words, the American banker maintains sterling balances in London, while the English banker maintains dollar balances in New York. The bookkeeping for these dollar balances is simpler than for the nostro accounts, as no foreign currency record need be kept of the transactions. The foreign banker makes dollar remittances or draws dollar drafts on his dollar balance, and foreign currency does not enter into the matter so far as the American banker is concerned. Hence there is no need for him to record anything but American dollars. Just as the foreign banker allows the American banker interest on his foreign balances, so the American banker allows interest on dollar deposits to the foreign banker. Every month as a rule the American banker sends a statement of the dollar account to his foreign correspondent, who checks it and reconciles it with his books exactly as the American banker does with his nostro accounts.

Commercial Letters of Credit

These transactions make up a great volume of the foreign exchange business and at the same time have an important bearing on the import and export trade of the country. Practically all of the nation's exporting and importing is carried on through

the medium of letters of credit and bills of exchange. It is not often that actual gold bullion passes between the countries to settle commercial balances. In most instances the credit of banks and bankers and their correspondents in the various countries furnishes the means to this end. It is not within the scope of this chapter to discuss in detail the methods of financing international trade, but we may at least take a typical case and follow the transactions through the foreign exchange banker's books.

Assume that the International Trading Corporation wishes to import merchandise from France. The company approaches an American banker having branches or correspondent bankers in France with a request to open a letter of credit. This is called a "commercial letter of credit" (C.L.C.) as against the travelers' letter of credit (T.L.C.). The banker has two ways of handling this request. If the standing of the corporation warrants, he may grant an unsecured credit, merely requesting a trust receipt or warehouse receipt covering the merchandise upon arrival in this country. If he desires greater security, he may grant a secured letter of credit, whereupon he will request the customer to deposit collateral in the form of securities to be held by him during the life of the credit. Under the letter of credit granted either in favor of the customer or in favor of some definitely named agent abroad, such as a French exporting house, the bank will accept all drafts drawn on itself by the foreign exporter or by the importer against the imports. Generally the acceptor bank will demand that bills of exchange presented for acceptance must be accompanied by shipping documents, bills of lading, consular invoices, marine insurance papers, and other similar documents. In this case—documents upon acceptance (D/A)—the documents are surrendered to the bank with the draft. The bank detaches the documents from the draft, accepts the latter, returns it to the present holder, usually the correspondent bank or the agent of the French exporter who drew the draft, and notifies the American importer that the documents will be surrendered to him upon trust receipt covering the merchandise

imported. The importer is now able to take possession of the goods and place them on the market for sale, eventually collecting the money necessary to meet the draft which matures in from 60 to 90 days or longer. The bank retains a lien upon the goods until the draft has been met. Meanwhile the correspondent's bank or agent holds the American bank's acceptance, which is prime commercial paper and can easily be discounted in the market. The French exporter received his money when he sold the draft which he drew in Paris to his local banker and received credit for the proceeds.

Under certain conditions the American banker may not care to accept the draft against surrender of documents and may insist upon payment, documents upon payment (D/P), before surrendering the documents to the importer. This, however, is rare where the drawee is a bank, but is quite common where the drawee is a merchant, whose credit naturally is not so well established.

Issue of Letters of Credit

When the bank opens a credit to the account of the American importer it creates a contingent liability which at any time may become a real liability. The contingent liability arises from the agreement by the bank to allow the merchant the use of the credit standing of the bank under the letter of credit granted, and this may lead to a foreign draft drawn by some exporter being presented for acceptance, creating a real bills payable liability.

Numerous systems are in use to keep track of this contingent liability. Some banks use a letter of credit ledger in which each customer has an account, showing the credit limit and terms of the letter of credit, as well as other needed information, entries being made to record drafts accepted, due dates, payments to be made, etc. A better system is a loose-leaf record with columns giving the following information: credit limit, date of drafts drawn, tenor, amount, maturity, date of acceptance, payments made by the customer against drafts, total real liability of the

. . . .

. . . .

Please take note that we have issued. . . . .

Letter of Credit No. . . . . dated. . . . . for. . . . .

Account. . . . .

Favor. . . . .

For. . . . .

. . . .

. . . .

Expires. . . . .

Drafts at. to be accompanied by. . . . .

. . . .

. . . .

Insurance. . . . . Commission. . . . .

Very truly yours,

THE FOREIGN EXCHANGE BANK

Form 11. Notification of Granting Letter of Credit

customer, total real liability of the bank, total contingent liability of the bank. When the credit is first opened there is only a contingent liability on the part of the bank. When drafts are accepted the contingent liability decreases and the real liability increases. As the customer makes payment against the acceptances or discounts the drafts before maturity, the real liability decreases and the contingent liability increases again. This method has the advantage of showing the fluctuations of both the real and the contingent liability of the bank and of the customer's liability to the bank at all times.

At the time the bank grants the letter of credit a notice may be sent to the customer worded somewhat as in (Form 11).

The entries to be passed when granting this letter will depend entirely upon whether the bank considers the contingent liability one to be shown in the financial statement only as a footnote or as an addition to its other liabilities. In the former case no entries need be passed but in the latter case the contingent liability will be offset on the asset side by a contingent claim against customers under letters of credit. They might be as follows:

Customers' Liability under Letters of Credit...	$......	
Commercial Letters of Credit Issued...		$......
To record obligation of customers to reimburse bank for engagements to pay or accept commercial bills of exchange or documents and to show contingent liability of bank arising from engagements to pay or accept commercial documents.		

Acceptance of Drafts

Let us assume that a draft with documents attached is presented to the bank for acceptance, the terms being D/A. After examination of all the documents and verification of the credit limit and liability on the books, the bank accepts the draft, thereby creating a real liability. The acceptance is entered in an acceptance register, along the lines of the form shown in Form 12, giving all the essential information about the acceptance. In

this form the number given to the acceptance by the bank is placed in the Number column, followed by the due date on which the draft matures. The names of the drawer and payee or the name of the customer for whom the draft was accepted may follow. The amount of the draft goes into the Bills Payable column. The total of this column at the end of the day is posted to the credit of Bills Payable, recording the acceptance liability. Letter of Credit (L/C) Sundries account will be debited with amounts for customers without special letter of credit accounts, while Individual Letter of Credit accounts will be debited with amounts belonging to them. The other columns are for profit and loss accounts and summary postings are made from them to the proper ledger accounts. The Letter of Credit Sundries and the Individual Letter of Credit Accounts columns represent the claims against customers under the acceptances. While these are the names used in the form given, others

ACCEPTANCE REGISTER

DATE										
NUMBER	DUE DATE	NAME	BILLS PAYABLE	LETTER OF CREDIT SUNDRIES	INDIVIDUAL LETTER OF CREDIT ACCOUNTS	RATE OF COMMISSIONS	C. L. C. NOSTRO IMPORT	C. L. C. KL. JT. IMPORT	EXPORT COMMISSIONS	OTHER SUNDRY COMMISSIONS

Form 12. Acceptance Register

may be employed. A better title for our purposes, commonly found in banks, is Customers' Liability on Acceptances under Letters of Credit, which is a controlling account supported by charges to the individual letter of credit accounts of the customers for whom drafts were accepted. The entry would then be:

Customers' Liability on Acceptances under Letters of
    Credit.................................... $......
        Bills Payable (Acceptances).................. $......
            To record obligation of customers to reimburse bank for commercial drafts accepted payable at a future date and to show bank's liability through acceptance of drafts against foreign shipments of merchandise payable at a future date.

At the same time that the acceptance is entered in the acceptance register, a similar entry is made in the acceptance maturity

ACCEPTANCE MATURITY RECORD

DATE

	NO.	DUE DATE	NAME	ANTICIPATION			BILLS PAYABLE

Form 13. Acceptance Maturity Record

record (Form 13). This record acts as a tickler, reminding the clerk in charge of it that on a certain date the maturing acceptance will have to be met. The record gives the number of the acceptance, the due date, the name of the customer for whose account the acceptance was given and who is to reimburse the banker for the payment of the acceptance. The Anticipation column will show those drafts which have been paid prior to maturity, in other words, where the demand upon the customer for payment on the due date has been anticipated. The date of the maturity record itself will be a day or so before the due dates

of the acceptances on which cover may be expected from the customers.

Cover and Payment of Accepted Drafts

Simultaneously with the acceptance of the draft by the banker, a notice is sent to the customer to whom the original letter of credit was issued, informing him that the banker has accepted the draft presented and giving both its maturity date and also the date on which the banker will expect a remittance from the customer to cover the acceptance. The cover date will usually precede the due date by one or more days, to give the banker time to deposit the customer's remittance and so furnish the funds for the payment. A form used for notification to the customer is here shown in Form 14.

NEW YORK..............19

Messrs..............................

....

Dear Sirs:

We beg to inform you that......................................

have accepted for your account in virtue of our letter of Credit No......

the draft of...

....

For.....................   which plus a commission

of........%..............

will fall due in....................on..................and must be provided for at our New York Office on.....................of which please take note.

Yours very truly,

THE FOREIGN EXCHANGE BANK

Form 14. Notification of Cover against Acceptances

Now let us assume that the due date of the acceptance has approached and that the latter will be presented at the bank

where it is payable as mentioned in the draft. This is the bank where the foreign exchange banker keeps his account and which will honor the acceptance and charge the banker with the amount. The banker by the aid of his maturity record knows just when acceptances will fall due, and through his cash record will credit the bank for the payment and debit Bills Payable each day to liquidate his liability. The entry made in his cash record is:

Bills Payable (Acceptances)	$......	
Cash (The Correspondent Bank)		$......
To credit the bank with payment of acceptances falling due on this date and liquidate the liability on the books.		

Unless the customer for whose account the draft was accepted has remitted funds to his foreign exchange banker to meet this payment, the banker would have to use his own funds and would be entitled to charge his customer interest for the use of the money. As a rule, however, a remittance is received prior to the date of maturity, whereupon the banker passes the following entry through his cash record:

Cash	$......	
Customers' Liability on Acceptances under Letters of Credit		$......
To record receipt of cover to meet drafts, maturing on a certain date.		

The check received from the customer is deposited in the bank at which the draft is payable and furnishes the funds to meet the charge to the foreign exchange banker's account by the bank where he keeps his deposit. The credit to Customers' Liability on Acceptances under Letters of Credit correspondingly reduces the banker's claim on the customer. Where the foreign exchange house is a bank with which the customer keeps a deposit account, cover of acceptances is much simpler, as the bank merely charges the customer's account with the maturing acceptance. The customer must, however, see to it that he has a sufficient balance on deposit to meet his obligation.

Discounting Bills of Exchange

Another transaction connected with acceptances arising out of the export and import business appears in the trial balance as an asset with an exactly offsetting liability, as follows:

Bills of Exchange Discounted	$......	
Bills of Exchange Rediscounted		$......

One source of income of a foreign exchange bank is from the discount of prime commercial paper (bills accepted by other banks) for its customers, making a certain profit thereby. The bank cannot always afford to hold these bills until maturity and so it rediscounts them, receiving cash, but losing some discount, and sets up the contingent liability, Foreign Bills Rediscounted, which will disappear when the bills are paid by the drawee at maturity. As only prime paper is sold by the bank under the Federal Reserve Act there is no risk. It should be noted that the intermediate entries for cash disappear, and that under normal conditions the discount credited should be greater than the discount debited, yielding a profit to the discounting bank. The complete cycle of entries would be as follows:

(1) Bills of Exchange Discounted	$10,000.00	
Cash		$ 9,900.00
Interest (Discount)		100.00
To record discounting of foreign bills for customer.		
(2) Cash	9,960.00	
Interest (Discount)	40.00	
Bills of Exchange Rediscounted		10,000.00
To record rediscounting of foreign bills to federal reserve or other banks.		

The net result is an increase in the asset, cash, and a credit of $60 to the Interest Income account.

Miscellaneous Letter of Credit and Draft Transactions

Unmatured Acceptances. It frequently happens that a customer will prepay or anticipate unmatured acceptances, in which

case the bank's liability account, Bills Payable (Acceptances), is reduced and a credit to the Unmatured Acceptances account is substituted. At maturity this latter account is charged and Cash credited for the payment of the bill.

Acceptances by Foreign Correspondents. Aside from a bank's liability arising from its own acceptances under letters of credit for the account of foreign customers, it may also incur liabilities from the acceptance by its foreign correspondents of drafts drawn under letters of credit issued by it. In this case the American banker upon advice from his correspondent of acceptance of a draft, will charge the customer for whose account the draft was accepted and credit the account, Acceptances by Foreign Correspondents.

Customers' Liability on Acceptances under Letters of Credit....................................	$......	
Acceptances by Foreign Correspondents.......		$......

At maturity the customer will provide cover for the American banker, who may record the transaction as follows:

Cash..	$......	
Customers' Liability on Acceptances under Letters of Credit........................		$......

As the foreign correspondent will have honored his acceptance for the account of his American correspondent and charged the latter's account, the American banker will pass a third entry to clear his liability account and credit the foreign correspondent for payment of the draft, as follows:

Acceptances by Foreign Correspondents.............	$......	
Foreign Correspondents' Commercial Letters of Credit (Nostro) Account..................		$......

Unpresented Foreign Drafts. This liability account is virtually a suspense account. Assume that a foreign correspondent draws dollar drafts on an American bank and advises the latter of the fact. The draft has not yet been presented for payment, yet the liability exists in a contingent form and there must be funds

set aside to meet this demand upon the bank when the draft is presented. Accordingly the following provision is made on the books:

Foreign Correspondent's Dollar Account.............	$......	
Unpresented Foreign Drafts..................		$......

This sets up the liability and also in effect reserves a corresponding amount of the cash assets of the bank to meet the demand for payment of these unpresented drafts.

Dollar Drafts Drawn. This is a contingent liability account, set up when dollar drafts on foreign correspondents are sold by the American banker. Depending upon whether the dollar drafts were sold against cash or credit, the entry will be:

Cash or Accounts Receivable (Dollar Accounts)......	$......	
Dollar Drafts Drawn........................		$......

When advice is received that payment has been effected, the liability account is cleared.

Travelers' Letters of Credit and Checks. In order to eliminate the necessity of carrying large sums of money when traveling abroad, most banks and foreign exchange bankers issue travelers' letters of credit (T.L.C.). These may be issued either against cash payment by the customer or against the customer's liability, as with the commercial letter of credit. If the customer pays cash for his T.L.C. the banker's entry would be:

Cash.....................................	$......	
Deposits against T. L. C. Issued.............		$......
To record liability due to the receipt of cash from the sale of a travelers' letter of credit.		

As long as the letter of credit is not fully used by the traveler, the obligation of the bank will stand. These letters of credit will be honored by the foreign correspondents of the banker in cities and will be charged against his account. The traveler presents the letter of credit at the Paris correspondent's office, which issues francs in return and charges the American banker who issued the letter of credit. When the French banker advises

his American correspondent of the draft, the latter passes an entry reducing his obligation under travelers' letters of credit issued and crediting the foreign correspondent with the payment at the rate of exchange current on the date of presentation of the draft.

Deposits against Travelers' Letters of Credit Issued....	$......	
French Correspondent's T. L. C. (Nostro) Account..................................		$......
To credit foreign correspondent with payment of draft presented under T. L. C. and to reduce liability due to issue of letter of credit.		

If the customer is well known to the American banker, he may require no security, but may issue the travelers' letter of credit on the same basis as that of a commercial letter of credit. In this case the entries are:

Customers' Liability under Travelers' Letters of Credit	$......	
Travelers' Letters of Credit Issued............		$......
To record contingent claim against customer to offset contingent liability arising out of issue of travelers' letter of credit.		

The contingent character of both sides of this entry may change at any time to that of a real asset or a real liability.

Similar to the travelers' letters of credit are the travelers' checks issued by the larger banks, made payable to the traveler and forming a real obligation of the issuing bank. The entries are simpler since these checks are issued only against cash.

Cash..	$......	
Travelers' Checks Outstanding...............		$......
To record sale of travelers' checks and the obligation arising out of their issue.		

As these checks are presented abroad, honored by the foreign bank, and their payment advised to the issuing American bank, the entries are:

Travelers' Checks Outstanding.................... $......
Foreign Correspondent's T. L. C. (Nostro) Account.................................. $......
To reduce bank's liability and credit foreign correspondent for honoring travelers' checks.

Profit and Loss Accounts

Most of the profit and loss accounts given in the schedule are self-evident and require no explanation. Postings to the various accounts are made as a rule by summary entries at the end of the day, week, or whatever period is used. Such accounts as Guilder, Franc, Mark, Sterling, etc., represent profits or losses made in those foreign currencies on exchange sales and purchases.

The question may arise, however, how foreign exchange profits actually appear on the books and how track is kept of the profits or losses occurring through the year. In the section devoted to the foreign exchange trader it was shown how estimates of profits are made daily and current statistical records kept, showing the approximate profits arising from differences of rates between exchange sold and exchange bought. The actual profit or loss, however, appears in the nostro accounts kept with the various foreign correspondents. The following theoretical entries will show how the profits might appear in an account:

NOSTRO LEDGER—LONDON CORRESPONDENT

1/ 2/21 We buy....	£10,000	$40,000.00	2/ 2/21 We sell.....	£ 5,000	$20,160.00
1/ 6/21 " "	5,000	20,050.00	2/16/21 " "	10,000	40,000.00
Interest....	5		Cables and charges...	5	
	£15,005	$60,050.00		£15,005	
2/28/21 Nostro account (Profit)		110.00			
		$60,160.00			$60,160.00

PROFIT ON STERLING

	2/28/21 London Correspondent's Account......	$110.00

Where joint accounts are kept, the profits are divided in accordance with the agreement, crediting the foreign correspondent's account with his share of the profit. The complete entry under such conditions might be:

Foreign Exchange Joint Account	$1,500.00	
Foreign Correspondent's Joint Account......		$ 500.00
Profit and Loss (Sterling) Account..........		1,000.00
To close Foreign Exchange joint account and distribute profits according to agreement.		

CHAPTER IV

SAVINGS BANK ACCOUNTING

By Roy B. Kester

Two Types of Savings Banks

The distinction between a savings bank and a commercial bank is that a savings bank receives money not subject to check but payable only on the presentation of the pass-book and due notice, whereas a commercial bank discounts commercial paper, handles checking accounts, and lends on negotiable paper; in short, does a "commercial" business. However, the inclusion of the word "savings" in the title of a bank does not imply that it is purely a savings bank and nothing else. The actual test of what a savings bank is depends on the functions performed and not the name.

Of savings banks proper there are two types: (1) the mutual or trustee savings bank; and (2) the stock savings bank. In point of numbers, there are more stock than mutual savings banks; nevertheless this discussion is centered on the mutual type, because institutions of this class do a far larger volume of business. Most of the features of organization, methods of operating and procedure are equally applicable to both, the chief differences being those of ownership and profits distribution.

Characteristic Features of the Mutual Savings Bank

The following are the characteristic features of the mutual savings bank:

1. The depositors realize all the profits and bear all the losses. All the deposits, except a certain necessary reserve, are invested in securities yielding as high a rate as is consistent with absolute safety, and all the income, less a guaranty fund for

safety (like the ordinary surplus) and the necessary expenses, is paid to the depositors. Though generally called "interest," the payments to depositors are actually dividends. The net worth of the business belongs to the depositors and every accretion to it as well as every loss is their profit or loss. This fact accounts for the term "mutual," the depositors combining their savings, generally too small for individual investment, for their mutual advantage. There is no profit for anyone except the depositors themselves. The trustees of the bank hold a position of responsibility for which they receive no remuneration and the reward of which is the distinction of serving the community. The officers of the bank as well as the clerks are the salaried representatives of the depositors.

2. A second characteristic feature of the mutual savings bank is that its investments are subject to legal restrictions. Its depositors are almost always persons of small means, and as their savings deposits constitute the capital of the bank, they are not safeguarded by the ordinary capital stock and surplus as are the depositors in commercial banks.

3. Another characteristic feature of the mutual type of bank is the permanent character of the position of its trustees. Money cannot usually gain this position. The trustee must be elected by the board of trustees itself. Moreover, he is not deprived of his position unless he dies, resigns, becomes bankrupt, or, in New York State, fails to attend meetings or is expelled by a three-quarter vote of the board.

A weakness of the mutual type of bank lies in the fact that if through mismanagement it fails, the loss, unless covered by the guaranty fund, falls wholly upon the depositors, as they are the owners of the bank.

The Stock Savings Banks

The stock savings institution, so far as concerns its organization, resembles the modern corporation. Stock is sold, the stockholders elect the directors, the directors the officers, and

business begins. Profits for the stockholders are made by receiving an income from investments and deposits in other banks greater than the interest paid to depositors.

The profits are paid to the stockholders in the form of dividends after certain legal requirements as to accumulating a surplus have been satisfied. The rate of interest paid the depositors is a matter of contract, the bank paying as low a rate as is consistent with securing deposits. The depositors are paid only the stipulated rate of interest, no matter how great the profits. Conversely, they receive no less whether the bank suffers a loss or not. On the other hand, the depositors of the mutual savings bank are entitled to more than the ordinary rate of interest if profits permit after all expenses have been paid and the legal requirement of a guarantee fund has been fulfilled; but as noted above they also suffer whatever loss the institution sustains.

To sum up, the stock savings bank, like the ordinary commercial bank, is organized for gain, whereas the mutual savings bank makes no profits for itself, but is merely the agent or trustee for the whole body of depositors to whom it turns over its financial gains.

A feature which both types of savings banks have in common is the right to demand from depositors from 10 days' to 4 months' notice of withdrawal for sums above a certain amount. This notice is necessary because mortgage loans constitute a great part of the savings bank's investments, which are usually of some years' duration and on which money cannot be quickly realized.

The Organization of a Mutual Savings Bank

Though the trustees are the organizers of a mutual savings bank they receive little or nothing for their services and risk. The laws of practically all states deny the trustee the privilege of borrowing from the bank; he gets no fee—or only a small one—for his attendance at the board meetings; and any desirable salaried office in the bank is open to him only after the bank is

thoroughly established, when there is only a slight chance of his securing such a position; finally, there is no bank stock to increase in value and thus remunerate the organizers who own this stock.

A natural query is: If the trustees receive nothing for their services why do they organize a mutual bank? Their motives today are rarely wholly philanthropic as used to be the case in the earlier days of mutual savings banks. There are two main incentives to organization: The first is the desire of an established commercial bank to secure as a deposit the reserve fund that a savings bank must by law keep available for emergencies, either in its own vaults or on deposit in another bank. As the commercial bank pays the savings bank about 2% interest on this reserve and earns 5% or 6% on it, the reserve of a savings bank of any size is a profitable deposit for a commercial bank. The second incentive is often the desire on the part of an attorney to serve in the capacity of a trustee of a savings bank. Such a position gives him prestige, and enables him to increase the number of his clientele through his intimate association with this public institution. And last, but most important, the bank may prove to be a client requiring much legal work, the annual fee for which may run into the thousands.

A mutual bank must have a certain number of trustees ranging from 3 in Colorado and Minnesota to 30 in New York, two-thirds of whom must live in the county where the bank is situated. As bank trustees must be of the highest character, the men sought are the leading citizens in the community, whose names inspire confidence. The chief inducement to be offered a prospective trustee is the honor of the position, for as the institution grows, the prestige of the trusteeship grows likewise. In return, he must give the necessary time and attention to the general supervision of the bank; and in some states—as in New York—the trustees are required to pay the running expenses until the institution earns sufficient profits to repay this advance.

After the required number of trustees has been secured, notice of the proposed organization and like details must be

published at least once a week for 4 weeks in the most prominent local newspaper, before filing the certificate of organization and applying for a state charter; also, any other savings bank in the same locality must be given notice at least 15 days before the filing of the certificate. This certificate states the town or city ward where the bank is to be located, its name, the residence and occupation of the organizers, with their declaration to discharge faithfully the duties of the office. The document is filed in the county clerk's office and a duplicate copy is sent to the banking department of the state.

The official in charge of the banking affairs of the state (in New York the Superintendent of Banks, in Massachusetts and Pennsylvania the Bank Commissioner) investigates whether the bank will be of service to the locality and be successful, and whether the trustees are men of good local standing. If the investigations of the superintendent or commissioner prove satisfactory and the trustees give a bond to pay all expenses and interest to depositors until the bank pays its way, and if there is no opposition on the part of a similar institution in the same locality, the bank charter is usually issued. A meeting of the trustees is then held, committees are appointed, officers elected, by-laws adopted, and, after the necessary quarters have been secured, the bank is opened.

Legal Liabilities of Trustees

Since the trustee has no remuneration, he incurs no liability unless illegal investments are made with the bank's deposits, or unless gross mismanagement can be proved. If some investments are lost, the trustee is not liable provided he used the care that any prudent man would ordinarily use in his own business. No man has perfect foresight and judgment and such a loss would be part of the regular business risk. If, however, the trustee is grossly negligent and inattentive to his trust he is personally liable for fraud and loss. Embezzlement by one of the officers unless very cleverly concealed would probably make the trustees

liable because all states require a periodical examination of the bank's affairs and books by trustees' committees. Finally, the law's intent is to prevent officers in savings banks from serving at the same time in a similar capacity with banks of discount, for the reason that such an alliance has too often led to the subordination of the savings bank's interests to those of the commercial bank.

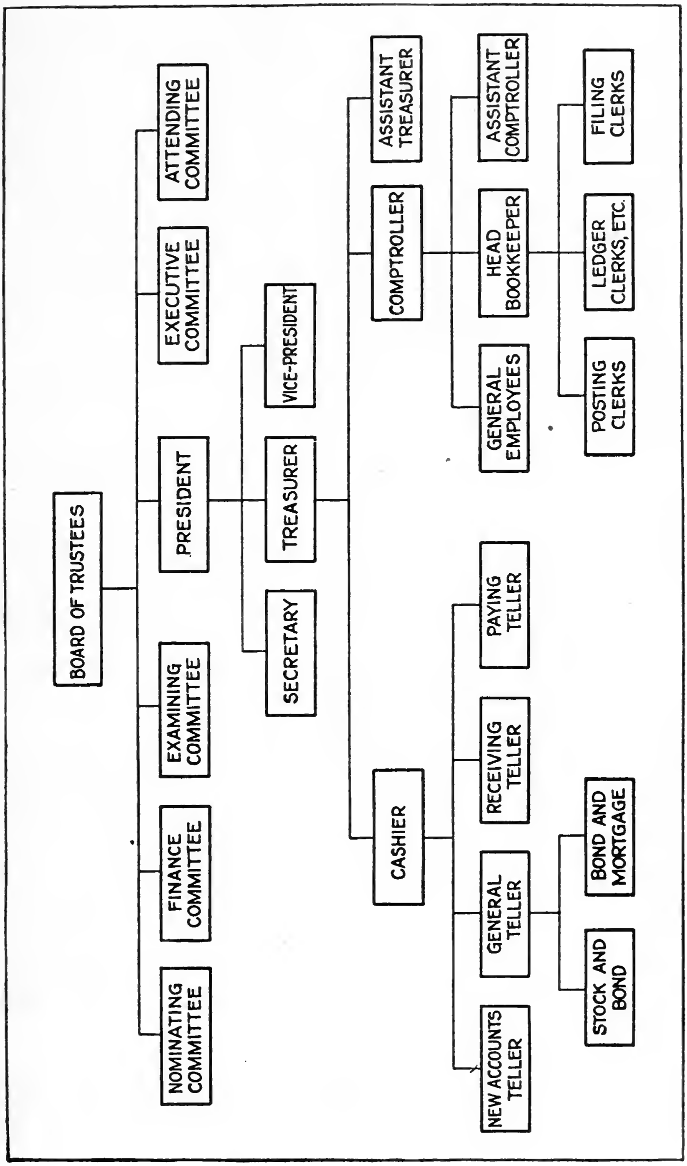
For the same reason most states today forbid a majority of the trustees of a savings bank to be directors of a commercial bank and also forbid trustees who are directors of a bank of discount to vote on the matter of selecting their bank as depository for surplus savings bank funds.

The Management—Executive

The executive work of the bank falls upon the officers and a number of committees, depending upon the size of the institution. The principal officials are the president, the vice-presidents, secretary, treasurer, and in a few banks the comptroller. The committees of a large savings institution include a finance committee, which superintends the sale and purchase of securities; an examining or auditing committee, which analyzes and verifies cash, vouchers, and expenses, and the assets and liabilities in general; an attending committee, which supervises the actual operation of the institution through the attendance about once a week of one of its members; an executive committee, which may have the same general duties as the attending committee but which makes in addition periodical examination of the bank's cash balance and deposits; and a nominating committee with oversight over all the appointments of trustees and officers.

A third division of the management comprises the clerical workers. At their head is the cashier, auditor, or chief clerk, who is the administrative head of the accounting system. Beneath him are the head bookkeeper, tellers, ledger clerks, assistants, filing clerks, and so on down to janitor, guards, and night watchman.

The accompanying chart (Form 1) shows a typical organization of a mutual savings bank.



Form 1. Organization of a Mutual Savings Bank

The Bank's Investments and Stock-in-Trade

A mutual bank's stock-in-trade is the savings received from depositors; the stock-in-trade of a stock savings bank is the sum realized from the sale of its shares of stock plus the deposits of its clientele. In the case of either type of bank this money received is invested in securities and mortgages on property. These investments are usually under strict legal regulation, the provisions varying somewhat in different states, and the interest received from them is the bank's main source of income. The difference between the interest and the necessary expenses of conducting the bank is the net profit.

In New York State the legal investments of a savings bank are:

1. Bonds of the United States or District of Columbia.
2. Bonds of New York State.
3. Bonds of other states with state guaranties, on which there has been no protracted default.
4. Any security of a New York State subdivision guaranteed by the district.
5. Securities of other United States cities of a certain age, size, and favorable record.
6. Bonds and mortgages on New York State unencumbered real property to a value of 60% of improved and 40% on unimproved land, qualified by minor requirements and reinforced by certain regulations.
7. Well-diversified first mortgage bonds of railroad corporations with good records and capacity. Only 25% of the bank's assets may be invested in bonds of this class.
8. Demand promissory notes secured by pledge and assignment of certain securities.
9. Bankers' acceptances.
10. Certain classes of real estate, chiefly that which the bank needs for business and that taken in satisfaction of a debt.

Distinctive Features of Savings Bank Accounting

Before describing the savings bank's accounts and records a brief statement will be made of several features more or less peculiar to savings bank accounting. They are as follows:

1. The daily statement of the proof of the depositors ledgers. This statement consists of a proof or trial balance of those accounts affected during the day. A complete trial balance of all accounts is taken every 6 months. The main reason for this daily proof of the depositors ledger is to detect errors as soon as made. If this proof were not made daily, the task of finding an error at the end of 6 months would in a large bank be practically impossible.

2. The continuous balancing of the depositors' accounts. The depositors ledger is kept in a way to show all account balances. The purpose of this feature is to prevent the payment of overdrafts and to save time when paying out withdrawals.

3. The valuation of securities at balance sheet time. This matter is important because on the valuation depends the amount of surplus and often the dividends that may be paid. To insure uniform accounting and guard against inflation of assets the Superintendent of Banks of the State of New York issues a list of the prices at which individual securities may be valued; these lists, determined by the sales for the 6 months preceding and general business conditions, are sent out on June 1, and December 1. Needless to say, the valuation is conservative.

4. The important part played by amortization principles due to the bank's heavy investments in bonds.

5. The prevention and detection of errors and defalcations.

The Departmental Working Organization

The accounting system of a savings bank is handled by a working organization, particularly in the larger banks, which is divided into the following departments:

1. New accounts
2. Paying

3. Receiving
4. General and executive

The records kept in each department will be discussed in the order given above.

New Accounts Department

The new accounts teller keeps what is called the "new accounts teller's summary" for the purpose of recording and summarizing his daily activities. On one side is a column charging him with the amount he has on hand at the beginning of the day's business and how much he takes in, that is, the amount of cash and checks received in opening accounts and the amount of new accounts opened by transferring from old accounts. On the other side is a column crediting him with the cash he turns over to the paying teller, the amount of checks he receives, and the amount of new accounts opened by transfer. As the checks received and new accounts opened have been both debited and credited, the balance shows how much cash should be on hand, checks not being counted as cash. There are separate columns at the right for listing the checks in detail (relatively few checks find their way into savings banks) and the kinds of cash—gold, silver, and bills. The daily summaries of all tellers go to the clerk in charge of the petty cash book. The reasons for this will be explained later.

The Paying Department

The withdrawal receipts or drafts, by means of which a depositor withdraws his funds, are made out by a clerk in the paying teller's department and given to the depositor for signature. The depositor receives his money from the paying teller only after his signature and account balance have been verified and the amount of the draft has been entered on a journal sheet, which is ruled to show the account number, name, amount of drafts, and previous and present balances. There is one sheet for each depositors ledger.

The withdrawal receipts before being used are numbered every morning consecutively from 1 up and are entered in the same order on the journal sheet so that a mistake can be quickly traced. At the day's close the journal sheets are summarized on a special columnar form. The total of the journal sheets and the total of the summary form or paying teller's proof should agree with the totals of the day's withdrawal receipts.

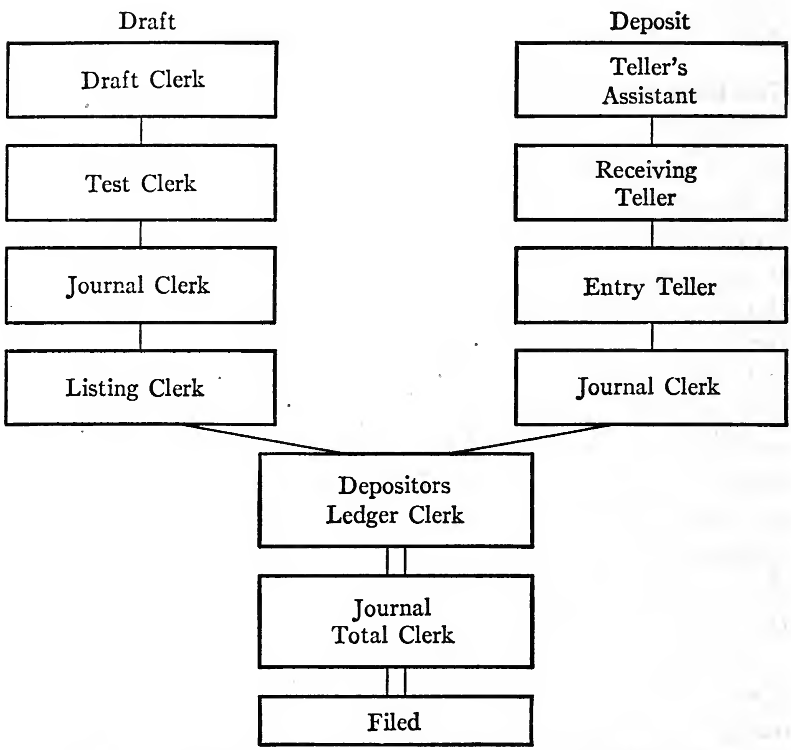
The Receiving Department

The procedure in the receiving department is much the same as in the paying department, the deposit tickets taking the place of the withdrawal receipts. The tickets are numbered in advance for each day, and give such details as the date, account number, name, and amount of the deposit. They are entered consecutively in a journal sheet, there being one sheet for each depositors ledger. After that the sheets are summarized on what is called the "daily proof" or "deposit total sheet."

At the close of the day the proof sheets of both paying and receiving tellers are sent to the head bookkeeper who posts their totals in a depositors control book or ledger the pages of which are ruled with vertical columns headed with the numbers of the various depositors ledgers and horizontal lines for the days of the month. The two summaries are the basis for the entries in the cash book and the general ledger.

The white drafts or withdrawal tickets and the yellow deposit tickets, which at first were arranged by the day's transaction number for entry on the journal sheet, are now rearranged by account numbers for entry in the depositors ledgers. Each deposit and draft is posted to the proper ledger card, in the four columns of which are entered the date, the amount of the deposit or withdrawal, and the balance. On the completion of the ledger entry the new balance after each deposit or draft is listed on a two-column sheet known as a "ledger slip," one column being for deposits and the other for drafts. The deposit and draft journal sheets, already described, before being added for the

daily summaries are also sent to the ledger section where the old and new balances from the ledger card are posted to the last two columns on the journal sheets. Therefore, at the close of the day the totals of the two-column ledger slip, must equal the totals of the last two columns of the deposit and draft journal sheets.



Form 2. Chart Showing Route of Draft and Deposit in Savings Bank

The chart above (Form 2) shows the steps in the life of the ordinary draft and deposit and the personnel required to handle them.

Note that a draft does not go to the paying teller. The journal sheet, written up from a draft or deposit ticket, goes from the journal clerk to the journal total clerk and then to the

head bookkeeper, who uses it as the basis for entries to the controlling ledger of the depositors ledger cards.

In most banks the receiving systems differ little. They approximate the following procedure: The first clerk receives the pass-book, makes out a ticket, and enters the amount in the book; the receiving teller receives and counts the cash and enters on his memorandum sheet the amount entered in the pass-book with the book's number; a third clerk then lists the deposit tickets whose totals must prove with the teller's sheet total.

The paying systems follow the same general plan: One clerk makes out the withdrawal draft slip and enters the amount in the customer's pass-book, another clerk keeps a record of the amounts entered in the pass-books, a third attends to the cash and counts it carefully. Thus, except in a small bank where one clerk may perform several functions, the work of one man checks that of another and fraud and the more common errors are almost eliminated.

In some banks a record is made on the ledger cards by the bookkeeper, who often makes the pass-book entries as well. This doubtless involves longer waiting for the customer than would be the case if the entries to the ledger cards were made at the close of banking hours. Again in a small bank it is often feasible to use the ledger card as a signature card, thus eliminating the necessity of a separate signature file. In a large bank the ledgers take up too much room to permit them to be handled by the tellers for quick reference.

The General and Executive Department

The work of the general and executive department is a little more varied than that of the others. The main functions of the department are those of: (1) the executive staff, (2) the payment of petty disbursements, (3) mortgage loans, and (4) stock and bond investment. These matters will be considered in turn.

Little need be said about the first two functions. The executive staff, as shown by the chart (see Form 1), is headed by the

president and its work consists in carrying out the general policy of the bank as laid down by the trustees, whether with regard to deposits or investments. As regards petty disbursements these are made by the teller in the bond and mortgage department merely because he is generally less occupied than the paying and receiving tellers.

As mortgage loans on real estate constitute the larger part of a savings bank's investments, the principal work of the executive department is with bonds and mortgages. Certain precautions are necessary to protect the bank in loans on real estate. The first essential is to determine the value of the property. Loans can be made to the extent of only 60% on improved real property and 40% on unimproved. To determine this value is very difficult, it depends chiefly on the income return. Property values are also determined to some extent from sales of similar pieces of property in the neighborhood. Finally, economic causes, such as the movement or trend of population, the appearance or disappearance of industries in the locality, and the opening of better means of transit, must be considered in appraising property.

The name of "stock and bond investment" for the third function of the executive department is really a misnomer. Actually savings banks cannot legally invest their deposits in stocks with one exception in New York State—the corporate stock of the City of New York—which, however, is essentially a bond issue.

Subsidiary Records—The Bond and Mortgage Record

The three principal subsidiary records of a savings bank are: (1) the depositors' records, (2) the bond and mortgage records, and (3) the stock and bond records. The first has already been discussed in connection with the receiving and paying departments. It remains to describe the other two. Systems differ in different banks but those outlined may be regarded as typical.

It is unnecessary to discuss the procedure followed by the executive department in granting a loan on a mortgage. Assum-

ing that a loan has been granted on real estate, the first accounting step is to record it in the bond and mortgage ledger. This ledger, like the depositors ledger, is in card form, is indexed by the number of the mortgage, and each card contains information as to the location of the property, the insurance, principal, and interest payments.

Three minor files are also kept for each mortgage: The first is indexed by name, the second by street, and in the third is a record of the expiration dates of insurance policies. The need for the first file is self-explanatory; the second is necessary because queries often come to a large savings bank as to whether or not there is a mortgage on property situated in such and such a street, the owner of which is unknown to the inquirers; and the third file shows the mortgage number, owner's name, location of the premises, insurance company, policy number, and amount.

Two weeks before the expiration date of the insurance policy a notice is sent to the owner stating that if the bank does not receive formal notification of renewal before noon of the day of expiration, the bank will renew the policy in one of its companies and charge the premium amount to the mortgagor. Many banks stipulate that insurance policies must be taken out by the borrower in designated companies only—a fair provision if the list of designated companies is sufficiently large. The stipulation must be acknowledged by the mortgagor before the loan is closed, for otherwise the law regards the bank as having waived this right.

For the sake of uniformity in the bank's records interest payments on mortgages are due in June and December. Two weeks before these semiannual dates notices are sent to the mortgagors. When the interest is paid, a receipt is given, the stub being kept as a record of the payment. If cash is paid, the date is stamped on the receipt and stub; if a check is given, a stamp with the word "check" is used below the date. On the receipt, the amount of the interest, the bond and mortgage number, and the name and

address of the mortgagor are printed by an addressograph, which also stamps the same details on the stub. Receipt of the interest is acknowledged on the bond and entered in the account. The cash or check received is entered with other payments on the bond and mortgage teller's report, which is the basis for entry in the petty cash book and the general records.

As unpaid taxes and assessments become liens prior to a first mortgage, it is to the bank's interest to be sure that such liabilities are paid. Therefore, once a year, the savings bank employs a tax-searcher to search the county records for any unpaid taxes recorded on property mortgaged with the bank. A notice is sent to all delinquents, and an auxiliary file is kept of them by their mortgage numbers until final payment of the liens is recorded thereon.

The Stock and Bond or Investment Records

The stock and bond records, the last of the three principal subsidiary records, are kept in connection with the performance of the executive department's fourth function, that of investing in stocks and bonds. They are controlled by the general ledger account, Stocks and Bonds. The basis of the records is a loose-leaf ledger known as the "amortization schedules book," divided into a number of sections, such as General Bonds, Bonds of States, Bonds of Cities in this State, Railroad Mortgage Bonds, etc. The sheets in each section are alike. At the top in the heading are recorded the name of the bond issue, the date of purchase, interest dates, nominal rate, and due date. Vertical columns from left to right are entitled, Periods Ending, Interest, Net Income, Reduction or Accumulation, Investment Value, and Par Value. Horizontal rulings indicate each 6 months' period ending June 30 or December 31. In the subdivisions of this book the different issues (one sheet for each) are filed by maturity date. Thus, if the bank buys 10 Pennsylvania Railroad bonds, due in 1938, say, at a cost of 104, a loose-leaf ledger sheet is filled out and filed by the year, 1938, in the Railroad Mortgage Bonds sec-

tion. By "investment value" is meant the cost value after giving effect to the periodic amortization. Thus, the amortization schedules book carries all the details of each issue, the most important points of which are the effective net income and the investment value at the end of each period.

Another securities book is a summary ledger known as the "stock and bond" ledger. This record shows the securities filed by the name of the issuing municipality or corporation. Thus, the bank may own ten or more different issues of New York City bonds. In the amortization schedules book these bonds would be filed with other bonds under the caption of "Bonds of Cities in This State" by the date of their maturity and so would probably be scattered throughout the subdivision; whereas in the stock and bond ledger the 10 issues would be on one sheet entitled and filed as "New York City Bonds (or Stock)," thus summarizing in one place the various issues held by the bank and showing the total amount of the holdings. The ruling of this ledger is of the ordinary type.

Amortization

A complete statement of the principles of actual amortization with illustrations of the formulæ involved is beyond the scope of the present chapter. A detailed account will be found in the second volume of this series, pages 269–276. If the cost of the security, and the nominal and effective interest rates are known, the amortization is an easy matter. Thus, if $1,029.12 is paid for a bond with an interest rate of 5% to yield 3%, the semiannual nominal interest is $25 (2 1/2% of $1,000) and the effective interest is $15.44 (1 1/2% of $1,029.12), obviously the bond is $9.56 nearer its maturity value and so this is the amount of the amortization. Therefore, the difference between the nominal and effective interest returns is the amount of the amortization—here $9.56. If it were a discount bond the effective interest would be greater than the nominal return, but the difference would still be the amount of amortization.

An amortization and investment value schedule for the illustration above is as follows:

Nominal Rate	Effective Rate	Amortization	Investment Value	Par Value
$25.00	$15.44	$9.56	$1,029.12	$1,000.00
25.00	15.29	9.71	1,019.55	
25.00	15.15	9.85	1,009.85	
			1,000.00	

Recording the Amortization

At the end of the 6-month fiscal periods the amortization is entered for each issue on each sheet in the amortization schedules book. On the summary stock and bond ledger the bond account for each class of issue is written up or down correspondingly. The total amortization is entered on the general journal as a charge or credit to Profit and Loss, depending on whether the effective interest returns for the period are greater or less than the nominal returns, and the offsetting entry, credit or debit, is to the Stock and Bond account in the general ledger. A detailed list of the amortization in the classes of securities held is entered in the journal in the descriptive section. Postings are made to the stock and bond ledgers from this list.

Theoretically, the amortization amount should be run through the Interest Income account. Here, for purposes of reporting and separation, it is handled as explained above.

The Cash Book System

Unlike the informal cash records kept by the other tellers, the bond and mortgage teller, in some banks, keeps a teller's cash book, from which he makes up his daily summary. In addition, three major cash books are kept: (1) a petty cash book

which contains all items of income and disbursements, the sources of which are explained below; (2) a monthly report cash book in which these items are summarized; (3) the general cash book, a memorandum record, in which the entries are again summarized.

The sources of entry for the petty cash book are the several tellers' summaries and the memoranda sent in, usually from the bond and mortgage department. The summaries have already been explained. When a mortgage loan is granted and a check is given to the borrower for the amount of the mortgage, as a memorandum for the cash system, the lawyer's order—which states that everything is satisfactory and the loan may be made—is sent to the bond and mortgage teller who is also the petty cash bookkeeper. Any other check disbursements are also sent to the petty cashier in the form of memoranda.

The petty cash book has two columns on each page and one page or more is allotted to a day's business. The left column shows at the top: (1) the opening cash balance; (2) the amounts received from depositors with detail for each teller's report; and (3) incidental receipts, such as mortgage principal and interest payments in detail, checks, and the like. In the right column are disbursements of the money received, consisting of: (1) deposits taken to other banks; (2) the amounts paid by the paying teller to depositors; and (3) any petty payments, such as expenses. Therefore, the left column with the opening balance increased by deposits and incidental receipts, less the right column, containing the detailed sums taken to depository banks, and the withdrawals of customers, and any petty payments, should equal the cash on hand. At the foot of the right column is a section entitled "statement of cash" to show the detailed amounts in bills, gold, and silver on hand at the close of the day in the vault and in each teller's cash drawer; also, in the left column there is a space at the bottom for cash over and in the right column for cash short.

From the detailed entries in the petty cash book, summaries are made to the second of the major cash books already referred to—the monthly report cash book—so named because its sum-

maries constitute the report of the cash changes for the month presented to the attending committee. For each month two pages facing each other are used in this monthly report cash book. The left page shows all cash receipts of whatever nature. Columnar sections are provided for the receipts from investments with description (because receipts from investments are generally received by mail in the form of checks, they are not put through the petty cash book); principal and interest receipts from bonds and mortgages; receipts from depositors with data as to the number of deposits, the number of accounts opened, and the amounts; and receipts from other miscellaneous sources, such as the sale of real estate, or cash over, etc.

The monthly report cash book is ruled with horizontal lines —one for each day of the month. At the bottom of the left page is a section for the summary of cash receipts. The right-hand page contains sections for payments; these include payments to depositors, the amounts lent on bonds and mortgages, the cost of investments—with columns for the cost, the par value, the premium, and interest yield—and sections for expenses paid, and other disbursements. At the bottom there is provision for a summary of disbursements by sections, which summary when added to the cash balance section, also at the bottom, should equal the summary of receipts section at the bottom of the left page.

Thus, while the petty cash book has a page for each day with details of each individual item of income and disbursement, the monthly report book has one line as a summary for each class of income and disbursement. In other words the two pages of the monthly report contain the summaries by sections of the petty cash book's individual details spread over 30 pages. The petty cash book does not state the amounts on deposit in other banks, which information is recorded only in the monthly report book. Postings to the general ledger are made from the monthly report book's daily summaries.

The third major cash book, the general cash book, has debit and

credit columns on each page, like the old-style cash book. After the dates are entered details of the accounts affected, descriptions, and the summarized amounts of the various items of cash receipts and payments. At the bottom of the usual six or seven summaries for each day is entered a memorandum of the day's balance. Because no postings are made from this book it could be dispensed with, all the necessary information being in the monthly report book. Actually, however, hardly 10 minutes are required to enter the facts it contains and it is valuable as a concentrated summary of the day's cash transactions. The cash book system may vary according to the size of the bank, but the methods described above may be taken as typical of the accounting in a large institution.

The General Ledger Accounts

The main record to which all transactions lead, is the general ledger, the cornerstone of the accounting edifice. The general ledger contains the controlling accounts for the depositors ledgers, the bond and mortgage ledger, the stock and bond ledger, the real estate ledger, and for cash. The two main sources of entry for the general ledger are the general journal and the cash books. The general journal contains non-cash transactions, such as a summary of the bond amortization every 6 months, real estate acquired under foreclosure, and the like.

In all there are only about 20 accounts in the main ledger. In the light of the preceding discussion a brief description of each account will complete the bird's-eye view of the accounting system as a whole.

Cash. This is the controlling account of the entire cash system. It includes all funds on hand and on deposit in other banks.

Loans on Pass-Books. These are loans made to customers and the collateral is the pass-book lodged with the bank. Such assignments are usually made by customers in need of money, at a time when to draw cash from their account would involve the

loss of interest already accumulated. In the state of New York such loans are made in the form of 90-day notes and up to 90% of the collateral.

Loans on Notes. Savings banks seldom lend on promissory notes. It is legal, however, to lend an amount not in excess of 90% of the collateral deposited with the bank and this account represents such loans.

Interest Due and Accrued. This account is set up at the end of 6 months to show the asset, interest due and accrued but not yet paid. It is not essential, however, to set up a separate account for such interest, for it can be shown as well in the Interest account.

Insurance. This account represents the amount of prepaid or unexpired insurance. It is a deferred asset account showing the result of the semiannual insurance policy examination for the purpose of determining the unexpired amount.

Stocks and Bonds. This controlling account records the investment value of the securities owned by the bank. Its operation will be explained later.

Bonds and Mortgages. A controlling account representing the amount of the loans for which mortgages have been received as security.

Banking House. This account represents the total value of the bank's place of business together with all the furniture and fixtures, vaults, cages, and so on. Such assets are usually valued at a nominal amount, for the sake of conservatism.

Other Real Estate. This controlling account includes all property other than the banking house, such as property acquired by foreclosure. The subsidiary ledger is known as the "other real estate" ledger.

Depositors. This is a controlling capital liability account and represents the amount the bank owes its depositors.

Taxes Accrued. This represents the taxes due and unpaid; it is adjusted semiannually.

Weekly Savings Club. The amount owed depositors under

this form of saving in accordance with which a dollar a week is deposited for fifty weeks. The bank gets the use of the money without paying interest and the depositor has the benefit of the compulsory saving.

Surplus. This represents the excess of the assets over the liabilities. In a mutual savings bank this account represents the amount of the net worth.

The accounts above are all balance sheet accounts; those to follow belong to the profit and loss summary.

Interest. This account represents the amount of income received from the three principal sources of income, namely, interest on stocks and bonds, on bonds and mortgages, and on the moneys in depository banks. The monthly report cash book contains the details of how much is received from each source.

Inspections and Fees. This account shows the amount of income received from charges for property inspection on account of mortgage loans and the fees due the bank for inspections made after fires and the like.

Other Real Estate Rents. The income received from rent of the bank's other real estate.

Stock and Bond Sales. This account represents the profit or loss from the sale of investment securities. Thus, when bonds are sold, Cash is debited and Stock and Bond Sales credited; then Stock and Bond Sales are charged with the investment value of the securities sold and Stocks and Bonds account is credited.

Other Real Estate Sales. This account is similar in principle to the Stock and Bond Sales account, showing the profit or loss on the sale of the bank's real estate.

These two accounts thus show the profit or loss on these two types of sales.

Expenses. This account gathers all costs of operating the bank—from lunches to taxes.

Profit and Loss. This is the regular account for periodic summarization. No current entries are made therein.

Dividends

Dividends are an important feature of savings bank accounting. In the contract between a stock savings bank and its depositors as to the rate to be paid the latter, the term used is "interest." But where the bank is merely the agent and trustee for the depositors, the word "interest" is not really applicable. Hence, in a mutual bank, where the depositors are also partners in the profit and loss, there can be no money paid unless a profit has been earned. Indeed, New York State prohibits the guaranty of dividends (or "interest," as it is generally called) in advance, because the promise to pay a certain minimum rate might cause the bank unconsciously to sacrifice safety for higher returns from its investments. It is, therefore, seen that "dividends" is a better word for the returns received by depositors than "interest."

The Guaranty Fund

Originally the law intended that the entire profits be distributed to depositors. Experience soon showed, however, that the better policy was to set aside out of profits a guaranty fund against future contingencies. Therefore the trustees were given the power to withhold whatever earnings they deemed wise and now, in New York State, a minimum surplus fund of 10% of the amount due depositors must be maintained constantly. Profits in excess of that may be paid out in dividends. Extra dividends must be paid when the surplus fund, as reckoned on the basis of the periodic report to the superintendent of banks, is over 25% of the amount due depositors.

Recording the Dividend

After the rate of dividend has been fixed by the trustees, it becomes necessary to figure the amount due each depositor.

There are two general methods of figuring the amount and entering it on the ledger cards. The first is for one clerk to figure the amount and post it in pencil on the card and for another clerk to check the computations, and post it in ink. Under the

second, the work is done on distribution sheets, proved, and posted to the cards in ink. A combination of the two methods is sometimes used, one clerk figuring the interest from the ledger cards and another clerk figuring it on a distribution sheet. The two separate results are then compared. By this scheme two different persons are employed at the same time and no one reviews his own work for accuracy.

The distribution sheet is headed "Dividend and Trial Balance Sheet for January 1, 19–" and contains 6 columns headed left to right: "Number of Account," "Amount 6 Months," "Amount 3 Months," "No Interest," "Total of Interest," "Balances." In distributing, great care is needed lest the days of grace be overlooked and lest the rule be disregarded that drafts shall be deducted from the last deposit. Thus, if there are deposits of \$15 and \$20 on February 26 and March 3, respectively, and a draft of \$25 on March 15, this draft deducted from the \$20 deposit on March 3 leaves \$5 to be deducted from the \$15 deposit on February 26. Therefore, under the first-of-each-month method, the \$10 left (\$15 – \$5) of the deposit of February 26 will draw interest from March 1; under the quarterly method from April 1.

After the interest calculations have been compared and proved, the totals of the distribution sheets are added and journalized thus:

Profit and Loss
  Dividends

Dividends
  Depositors

The Savings Bank Audit

The books of a savings bank should be audited not only for the purpose of testing the work of the clerical force and their honesty and fidelity but also to answer such questions as these: Is the institution solvent, the management honest; are the assets intact, the liabilities as represented, the policies safe and sound; and is the work reported properly to the managers?

In general there are four kinds of audits:

1. The internal audit. This is effected by checking one employee's work against that of another and also by the transfer of a clerk from one position to another. This method of audit should always be made an essential feature of the organization. Collusion, of course, may circumvent the effect of an internal audit, but collusion is not common.

2. The audit by state bank examiners. This is more for the purpose of reports or digests of the bank's business than for auditing.

3. The trustee's semiannual audit. This examination is valuable chiefly because of its appraisal of the bank's assets rather than of any detailed facts brought to light by strict auditing, although a detailed audit may be made.

4. Audit by an outside party. This is doubtless the best kind of audit. A certified public accountant, for instance, is a specialist in such work and will state the facts as they are without fear or favor.

The two main things a bank audit should determine are:

1. Do the assets as represented by the books really exist? To answer this question practically all the assets must be examined. In doing this such matters as these must be investigated: verification of cash; examination of loans on collateral and the value of the collateral, to determine the adequacy of the margin; the regularity and sufficiency of the mortgage papers; and the worth of the real estate, banking house, etc.

2. Are the liabilities as shown by the pass-book balances the same as those shown by the books? This is an important consideration because in most defalcations the money received from depositors is withheld and they are credited for the amount. Hence the importance of the request on pass-books to "please present the book at regular intervals for the entry of interest and comparison with the bank's balance," can readily be understood.

The Statements—Balance Sheet

As in other business institutions, the two principal statements are the balance sheet and the summary of profit and loss.

There is little to explain about the balance sheet. The assets and the liabilities, principally deposits and accrued taxes, are set up as ordinarily. The excess of assets in the mutual bank is the invested surplus, there being, as already explained, no capital stock. The correct statement of the invested surplus depends upon the correct valuation of the securities. A par valuation would obviously be inaccurate because securities are seldom worth their par value. A cost or market valuation, whichever is the lower, might also be incorrect if the market were abnormal. As before noted, to enable all savings banks to value their security holdings at the same uniform prices, the Superintendent of Banks in New York State issues a detailed list every 6 months of prices at which legal investments for savings banks must be valued.

In general, the surplus may be stated at three different values, investment value, par value, and market value (this last named value depending on the state superintendent's idea of a fair market valuation).

The balance sheet must be submitted in the semiannual report to the Superintendent of Banks in New York State in a certain form. This form will be used in the solution to the illustrative problem which follows. It will be noted that the balance sheet is not arranged in accordance with the liquidity of the assets or the promptness with which the liabilities will have to be met—as the best accounting theory advises. The form is largely the outgrowth of custom.

It must be borne clearly in mind that the balance sheet drawn up with securities valued at market will not conform with the books where securities are kept on an investment-value basis. Statements for internal use, as distinguished from those reported to the state banking department, should, of course, be in accord with the books, and in whatever form is best for management purposes.

Summary of Profit and Loss

The principles which govern the compilation of the summary of profit and loss are equally regular. The gross income from the three principal sources—stocks and bonds, bonds and mortgages, banks and trust companies—together with miscellaneous income, is shown. From the total gross income the expenses are deducted and the balance is the net income. After the net income, the amount of the dividend to depositors is shown and finally the net surplus for the period.

The required legal form for the income statement will also be given in the problem to follow. Most of the terms in this statement, as well as in the balance sheet, are self-explanatory. Interest income is a credit on the books as the term, Credit Balance, Interest, in the income statement, indicates. Also amortization is a credit on a discount bond (if bought below par) because it increases the nominal interest income and is a charge against nominal interest received on a premium bond. "Franchise" means the state tax or the right given by the state to do business as a savings bank.

Because of the importance of the Cash account in bank accounting it is an aid to the understanding of the subject to trace the sources of cash receipts and the objects of cash expenditure. Therefore, a statement of cash is also called for in the problem.

Illustrative Problem

Draw up a balance sheet (legal form), a summary of profit and loss (legal form), and a statement of cash from the information given below. In the solution given, the form, so far as arrangement, schedules, etc., are concerned, will be that used for reporting to the superintendent of banks. However, stocks and bonds, instead of being valued according to the superintendent's list, will be shown at their book, i.e., present investment, value so that the balance sheet will be in accord with the books.

The reader will understand that in the formal report which each savings bank is required to submit to the state superintendent's department at the close of each 6 months' period, the securities held by the bank at that time must be valued in accordance with the superintendent's valuation list and so incorporated in the report of the balance sheet. Accordingly, the surplus shown thereon will be the market value surplus. Reference to the form on page 131 indicates that provision is made for showing both the investment value and the par value surplus items. The balance sheet drawn up for internal use must, of course, show the investment value surplus, with market value carried as a memorandum.

On July 1, 1920, the condition of the Modern Savings Institution was as shown in the following trial balance, taken from the books after closing, the bonds having been valued at present cost (investment value):

Banking House and Lot	$ 250,000.00	
Bonds of New York State	1,697,355.89	
Bonds of Other States	1,588,695.63	
Bonds of Cities, Counties, Towns, Villages, and School Districts in New York State	18,168,451.08	
Bonds of Cities in Other States	13,029,059.37	
Railroad Mortgage Bonds	5,127,527.59	
Other Real Estate	16,718.84	
Accrued Interest	777,773.33	
Cash on Hand	501,619.97	
Cash on Deposit in Banks and Trust Companies	4,324,541.38	
Deferred Insurance	2,368.92	
Bonds and Mortgages	43,678,050.00	
Accrued Taxes		$ 40,000.00
Deposits		76,865,888.29
Surplus		12,256,273.71
	$89,162,162.00	$89,162,162.00

The following trial balance taken before closing and covering the 6 months' business ending December 31, 1920, shows the condition on that date:

Cash on Hand	$ 402,967.43	
Cash on Deposit	4,419,719.27	
Interest on Stocks and Bonds		$522,315.86
Interest on Bonds and Mortgages		643,837.76
Interest on Deposits in Other Banks		50,512.39
Unexpired Insurance	2,591.42	
Bonds and Mortgages	45,188,075.00	
Bonds of Various States	3,298,544.24	
Bond and Mortgage Inspections		1,220.00
Petty Expenses	2,269.07	
Stationery and Postage	1,627.15	
Advertising	3,836.10	
Salaries	73,010.00	
Taxes	1,620.24	
State Banking Department	605.31	
American Bankers' Association Dues	75.00	
Banking House and Lot	250,000.00	
Other Real Estate	41,698.25	
Railroad Mortgage Bonds	5,066,649.21	
Bonds of Cities, Counties, etc., in New York State	17,970,975.15	
Bonds of Cities in Other States	14,608,422.87	
Franchise Tax	51,343.76	
Cash Short and Over	25.54	
Amortization of Bond Premiums	57,458.24	
Amortization of Bond Discounts		1,552.66
Deposits		77,965,801.37
Surplus		12,256,273.21
	$91,441,513.25	$91,441,513.25

There was also interest accrued of $300,000 on stocks and bonds, of $484,574.65 on bonds and mortgages, of $10,000 on bank deposits. A semiannual dividend at the annual rate of 4% and amounting to $1,481,835 was due depositors. The worth of the bank's securities on December 31, as set by the superintendent's price list, was $39,391,416.12. Their total par value amounted to $39,193,000.

Exhibit A

The Modern Savings Institution

Balance Sheet

December 31, 1920

1. Bonds and Mortgages		$45,188,075.00
2. Stock and Bond Investments: (Schedule 1)		
Par value	$39,193,000.00	
Present cost	40,944,591.47	40,944,591.47
Market value	39,391,416.12	
3. Loans upon Pledge of Securities	None	
4. Banking House and Lot: (Schedule 2)		
Actual cash value		
Book value		
Cost value		250,000.00
5. Other Real Estate: (Schedule 3)		
Actual cash value		
Book value		
Cost value		41,698.25
6. Cash on Deposit in Banks or Trust Companies (Schedule 4)		4,419,719.27
7. Cash on Hand (Schedule 5)		402,967.43
8. Total of Collectible Interest (Schedule 6)		794,574.65
9. Amount of All Other Assets (Schedule 7)		2,591.42
Total Resources		$92,044,217.49

1. Amount Due Depositors:		
Principal	$77,965,801.37	
Dividend credited	1,481,835.00	$79,447,636.37
2. Other Liabilities:		
Dividends accrued on deposits	None	
Expenses incurred but unpaid (specify)	None	
3. Surplus:	$12,256,273.21	
(a) Guaranty fund		
(b) Undivided profits		
(c) Net earnings for current period	340,307.91	12,596,581.12
Total Liabilities		$92,044,217.49

Investment Value Surplus (as above)	$12,596,581.12
Market Value Surplus (as set by State Superintendent)	11,043,405.77
Par Value Surplus	10,844,989.65

Schedule 1

Bonds of Various States	$ 3,298,544.24
Bonds of Cities, Counties, Towns, etc., in N. Y.	17,970,975.15
Bonds of Cities in Other States	14,608,422.87
Railroad Mortgage Bonds	5,066,649.21
Total (Present Cost)	$40,944,591.47

Schedule 2

Banking House and Lot (in detail)	$ 250,000.00

Schedule 3

Other Real Estate (in detail)	$ 41,698.25

Schedule 4

Cash on Deposit in Banks or Trust Companies (in detail)	$ 4,419,719.27

Schedule 5

Cash on Hand (in detail)	$ 402,967.43

Schedule 6

Interest Accrued on Stocks and Bonds	$ 300,000.00
Interest Accrued on Bonds and Mortgages	484,574.65
Interest Accrued on Deposits in Other Banks	10,000.00
Total Collectible Interest	$ 794,574.65

Schedule 7

Deferred Insurance	$ 2,591.42

Exhibit B

The Modern Savings Institution

Summary of Profit and Loss

For the Six Months Ending December 31, 1920

Credit Balance, Interest (Schedule 1)		$2,011,240.66
Credit Balance, Other Income (Schedule 2)		1,220.00
Amortization on Stocks and Bonds		1,552.66
Gross Income		$2,014,013.32
Debit Balance, Expense (Schedule 3)	$83,042.87	
Franchise	51,343.76	
Amortization on Stocks and Bonds	57,458.24	
Debit Balance, Cash Short and Over	25.54	191,870.41
Net Income		$1,822,142.91
4% Dividend to Depositors		1,481,835.00
Balance Carried to Surplus		$ 340,307.91

Schedule 1

Interest on Stocks and Bonds	$ 822,315.86
Interest on Bonds and Mortgages	1,128,412.41
Interest on Deposits in Other Banks	60,512.39
Total Interest	$2,011,240.66

Schedule 2

Bond and Mortgage Inspections	$ 1,220.00

Schedule 3

Petty Expenses	$ 2,269.07
Stationery and Postage	1,627.15
Advertising	3,836.10
Salaries	73,010.00
Taxes	1,620.24
State Banking Department	605.31
American Bankers' Association	75.00
Total Expense	$83,042.87

EXHIBIT C

THE MODERN SAVINGS INSTITUTION

STATEMENT OF CASH

For the Six Months Ending December 31, 1920

Receipts		*Disbursements*	
Cash on Hand and in Banks, July 1, 1920	$4,826,161.35	Depositors, including Dividends Paid	
Depositors (Schedule 1)	1,099,912.58	Loans on Bonds and Mortgages (Schedule 4)	$1,510,025.00
Interest on Investments, Loans and Deposits (Schedule 2)	1,994,439.34	Loans on Stocks and Bonds (Schedule 5)	1,389,407.49
Rents from Banking House		Stocks and Bonds Purchased, including all charges	
Rents from Other Real Estate		Interest (other than dividends) .... None	
Mortgages (loans paid)		Current Expenses of the Bank:	
Redemption of Stocks and Bonds		Salaries	
Sale of Stocks and Bonds		Taxes: Bank House—; Surplus—; Mortgage—; Expenses, except taxes of Banking House, viz., Repairs—; Insurance—; Other—	
Real Estate Sold		Rent of Banking Rooms	
All Other Sources (Schedule 3)	1,220.00	Expenses of Other Real Estate: Repairs—; Insurance—; Taxes—; Other—	
		Other Expenses, not including above (Schedule 6).	174,386.63
		Real Estate acquired by Foreclosure, or in settlement of Debts due the Bank (Schedule 7)	24,979.41
		Other Payments (Schedule 8)	248.04
		Cash on Hand and in Banks December 31, 1920	4,822,686.70
	$7,921,733.27		$7,921,733.27

Schedule 1

Depositors, December 31, 1920 (before dividends)	$77,965,801.37
Depositors, July 1, 1920 (after dividends)	76,865,888.79
Net Cash Received	$ 1,099,912.58

Schedule 2

Accrued Interest, July 1, 1920	$ 777,773.33
Interest (paid in cash), December 31, 1920	1,216,666.01
Net Cash	$ 1,994,439.34

Schedule 3

Bond and Mortgage Inspections	$1,220.00

Schedule 4

Bonds and Mortgages, December 31, 1920	$45,188,075.00
Bonds and Mortgages, July 1, 1920	43,678,050.00
Net Cash Paid	$ 1,510,025.00

Schedule 5

Stocks and Bonds, December 31, 1920 (Exhibit A, Schedule 1)	$40,944,591.47
Net Amortization	55,905.58
	$41,000,497.05
Stocks and Bonds, July 1, 1920	39,611,089.56
Net Cash Paid	$ 1,389,407.49

Schedule 6

Total Expenses (Exhibit B, Schedule 3)		$ 83,042.87
Franchise Tax	$51,343.76	
Accrued Taxes, July 1, 1920	40,000.00	91,343.76
Net Cash Paid		$174,386.63

Schedule 7

Other Real Estate, December 31, 1918	$41,698.25
Other Real Estate, July 1, 1918	16,718.84
Net Cash Paid	$24,979.41

Schedule 8

Cash Short and Over		$ 25.54
Deferred Insurance, December 31, 1918	$2,591.42	
Deferred Insurance, July 1, 1918	2,368.92	222.50
Net Cash Paid		$248.04

CHAPTER V

BITUMINOUS COAL MINE ACCOUNTING

By WILLIAM J. THOMPSON

I. Classification of Accounts

Coal Mining and Collateral Operations

The organization of a coal mining business sometimes involves several coal mining properties. In any event, however, whether it be one or more than one property, the mining operations are usually surrounded by several collateral operations at each property. Coal mines are not always to be found in settled communities. Usually it is the case, in the West, that the town is the outgrowth of mining operations.

In order to develop and to operate a coal mine it is necessary for the company to employ labor and these employees must be enabled to secure dwellings and boarding houses in which to live. This may require the construction of a town or mining camp including churches, schools, and hospitals. It is necessary that they have the means of securing food and clothing. This may require the operation of stores. Places of amusement and recreation should be provided. This necessitates investment in picture shows, billiard rooms, bowling alleys, and the like. Coal mines use large quantities of timber in their operations. As an assurance of supply, or on account of decreased cost, the company may cut its own timber from lands owned or leased. The surface lands may be cultivated and farming operations carried on to raise hay and grain for the live stock used at the mine. The company may maintain a coking plant at the mine and market part of its production in the form of coke instead of as coal.

Method of Coal Production

When coal land is acquired, the first operation is to open and develop the coal body. This must be done with rare good judgment, as on it depends the successful working of the property. A competent engineer must, therefore, be employed for this development work.

When the coal seam has been opened, the mining operations begin in earnest. The coal is dislodged by powder blasting, is loaded into mine cars, and is hauled to the surface to be loaded into railroad cars. In these operations the workers may be divided into three general classes—Inside or Bottom Men, Outside or Top Men, and Superintendence.

First in the order of the Inside Men is the miner, who actually produces the coal. He is usually paid per ton of coal loaded into mine cars plus allowances for special work, which are covered by contract. Those employed in the collateral mine work, such as installing and maintaining mine tracks, power lines, ventilation courses, drainage systems, etc., and operating electric locomotives, hoists, etc., also the mine-examiners, engineers, and bosses—these men are the Inside Company Men. They are usually employed on an hourly, daily, or monthly basis. The Outside or Top Men are also Company Men and are likewise paid by the hour, day, or month. The mine superintendent, mine engineer, office men, and various foremen, top and bottom, comprise the superintendence force.

The coal is hauled to the surface by mules or by machinery to an elevated structure called a "tipple" in the case of bituminous mines, which are the principal subject of discussion. At the tipple the coal is dumped by means of mechanical devices into the hopper scales and then, after being weighed, into a chute from which it slides into the railroad car below. This simple loading method is used at tipples not equipped with screening or other preparation machinery. Coal not screened into sizes is called "mine run," or "run-of-mine" coal. For the domestic and industrial consumer most coal is graded in size and the proc-

ess of grading is known as "screening." Bituminous coal is screened into various sizes, commonly known as "lump," "egg," "nut," "pea," and "slack."

In the anthracite mining more elaborate means of preparing the coal are used. Here it is necessary to break the coal into various sizes and remove slate, dirt, dust, and other impurities. The coal is broken in the "breaker," a large structure in which the coal as it passes through is crushed between rollers, screened, and picked by hand or machinery. In the last twenty years or so the coal in the large deposits of culm, or discarded material lying next to the breakers, has been reclaimed by passing it through a washing operation. The special structures in which these operations are carried on are called "washeries."

The electric power used in operating the mine plant may be either purchased from an outside company or generated in the company's own power plant. In addition to the tipple and power plant, other outside operating structures usually provided are a blacksmith and machine-shop, material house, powder house, barns, granaries, fan houses for the ventilation machinery, outside tramway structures when coal is trammed for a considerable distance from the mine opening to the tipple, railroad tracks and bridges, if such trackage must be constructed, buildings used in welfare work, such as bath houses and first-aid hospitals, and office buildings.

Mine Accounts and Accounting

From the above explanation it follows that coal mine accounting must be so organized and arranged that the investment in, and the operating income and expense of, the main operation—the extraction and marketing of the coal—and of each collateral operation, will be shown separately. Furthermore, in the event that more than one property is operated, the information should be classified similarly for each property. This distinction is effected either by using separate sets of records for some or all of the collateral operations, to be controlled by controlling accounts on the general ledger, or by grouping like accounts cover-

ing all operations under such significant titles as will readily permit statements of investment or earnings to be prepared and results from all operations to be separately shown.

The mine office and general offices are not usually located together, especially when more than one property is operated. In the West the general offices are almost invariably situated in a city which may be hundreds of miles from the mine. The combination of the two offices eliminates many reports and much clerical work. There is no need to explain the forms of the reports and methods of handling the accounting work when the offices are apart.

It is thought that setting forth in brief outline a general classification of accounts and its use under certain conditions, a form of cost and earning statement, and the distinctive forms used, will be sufficient to equip the student with a general knowledge of coal mine accounting. If he understands the fundamental principles of accounting, he should then be able to install a system of coal accounts, after familiarizing himself with local conditions; or, at least, he should have a better knowledge of such a system than he could acquire from memorizing forms and routine systems of limited application.

Account Classification

The following classification is presented as a working guide for the student. It combines ideas of the National Coal Association, the Federal Trade Commission, the Interstate Commerce Commission, and practical coal mine operators, and is in harmony with the Treasury Department's rulings regarding federal income and profit taxes.

General Balance Sheet Accounts and Profit and Loss

Number *Title*

201 Real Estate

Subdivided on the general ledger into separate accounts as follows:

201 (a) Coal Lands
201 (b) Undeveloped Coal Lands
201 (c) Surface Lands
201 (d) Leaseholds

202 Investment in Mine Plant and Equipment

This is a general summary or controlling account, and includes the total of the company's investment in mine,plant and equipment, which is more fully described and classified by the investment accounts numbered 1 to 40, as is shown in subsequent pages. These accounts should be either reflected in a subsidiary plant ledger with a separate sheet for each account, or summarized in some systematic form in a subsidiary abstract record which permits of an accurate analysis of the accounts.

203 Investment in Tenant Buildings and Camp

This is a controlling account kept in a manner similar to Account 202. It includes the investment in tenant buildings and camp as described and classified by the investment accounts numbered 43 to 47.

204 Investment in Mercantile Operations

A control account controlling the original capital advances to mercantile operations plus subsequent additions. (See Account 213 (a) for profits due). In this classification the mercantile operations are handled as separate departments, with their own sets of books, records, and accounts to reflect their operations. (In actual practice use is often made of a firm name for such operations, so slightly different from the corporate name of the coal mining company as to imply the relationship but permit of distinguishing the two operations.)

205 Investment in Other Property

Subsidiary records show the detail of this account.

206 Investment in Funds and Securities

Subdivided on the general ledger into several subsidiary accounts, viz.:

206 (a) Reserve Funds
206 (b) Sinking Funds
206 (c) Bonds
206 (d) Stocks
206 (e) Other Investments

207 Securities Issued—Held in Treasury

This account shows the par value of securities issued and held in the treasury, and also whether such securities are pledged or unpledged.

208 Deposits Outstanding on Contracts

209 Materials on Hand

This account shows the invoice cost, plus transportation charges, of materials and supplies on hand. The cost of any materials used immediately for a specific purpose may be charged direct to an appropriate investment or expense account. Credits to Materials on Hand are made from material requisitions furnished at the time material is issued at the material house. Materials taken into the mine are charged out at that time unless taken to a branch material house inside the mine, in which case provision is made for accurate record of transfers to such branch houses and issues therefrom. A monthly material report is made at the Mine Office to summarize charges and credits covering receipts and disbursements of materials during the month.

210 Freight on Materials

This account is charged with freight and express paid on materials and credited: (1) with the charges taken into Materials account by the mine office from the monthly material report, and (2) with the charges to investment or expense accounts for freight and express on materials charged out direct from vouchers instead of being handled through the Materials account.

211 Coal on Hand and in Transit

This account is subdivided on the general ledger into separate accounts, viz.:

211 (a) Coal on Hand

This shows the value, at production cost, of the coal stored at the mine and held for shipment, the coal in the loading chutes or in partly loaded cars not being included. In coal mining it is not customary to consider as production, coal that although mined and in mine cars has not at the close of a period been accounted for at the tipple and credited to the miner. Some companies account for coal that has been credited to miners but which on the last day of the period is still in the screens or partly loaded in railroad cars, by inventorying such coal at the beginning and end of the period, and debiting or crediting any decrease or increase at the end of the period as compared with that at the beginning to an account such as 57 (see below).

211 (b) Coal in Transit

This account includes the value of any coal delivered to the railroad for transportation to a customer but for certain reasons not yet invoiced. The account is credited and the customer is charged when invoice is rendered.

212 Accounts Receivable

This account is subdivided on the general ledger into separate controlling accounts, viz.:

212 (a) Accounts Receivable—Sales Office

212 (b) Accounts Receivable—Mine Office

212 (c) Employees' Overdrafts

This last account covers excess of deductions on pay-roll over earnings. The individual overdrafts are posted first in posting deductions on pay-roll for the next period.

212 (d) Accounts Receivable—Miscellaneous

A subsidiary ledger should be kept for each class of accounts receivable.

213 Accrued Accounts Receivable

This is subdivided on the general ledger into separate accounts, viz.:

213 (a) Profits Due from Collateral Operations
213 (b) Accrued Interest Receivable
213 (c) Accrued Accounts Receivable—Miscellaneous

214 Notes Receivable

This is subdivided on the general ledger into separate accounts, viz.:

214 (a) Notes Receivable—Trade
214 (b) Notes Receivable—Special

215 Subscriptions to Stock
216 Other Current Assets
217 Cash

This is subdivided on the general ledger into as many accounts as may be required, as for instance:

217 (a) First National Bank
217 (b) Citizens National Bank
217 (c) Provided for other possible bank accounts
217 (d) Provided for other possible bank accounts
217 (e) Cash Working Funds—Mine Office
217 (f) Cash Working Funds—General Office
217 (g) Cash on Hand—Mine Office
217 (h) Cash on Hand—General Office

218 Deferred Charges

This is subdivided on the general ledger into separate accounts, viz.:

218 (a) Organization Expenses
218 (b) Royalty Advances
218 (c) Insurance Premiums Paid in Advance
218 (d) Deferred Charges—Miscellaneous

219 Unadjusted Debit Items

This account includes debit balances which cannot be entirely cleared and disposed of until additional information is received, or debit items which are withheld for charge against future operations.

230 Long-Term Debt

This account is subdivided on the general ledger into separate accounts, viz.:

230 (a) Bonds
230 (b) Mortgage Notes

231 Accounts Payable

This is subdivided on the general ledger into separate accounts, viz.:

231 (a) Pay-Roll
231 (b) Unclaimed Wages
231 (c) Freight Payable

This last account covers freight charged to customer as having been prepaid but which, as yet, has not in fact been paid.

231 (d) Vouchers
231 (e) Accounts Payable—Miscellaneous

232 Accrued Accounts Payable

Subdivided on the general ledger into separate accounts, viz.:

232 (a) Accrued Taxes

Not federal income or profits taxes.

232 (b) Accrued Interest Payable
232 (c) Accrued Accounts Payable—Miscellaneous

233 Notes Payable

This is subdivided on the general ledger into separate accounts, viz.:

233 (a) Notes Payable—Trade
233 (b) Notes Payable—Special

234 Other Current Liabilities
235 Special Funds and Deposits Held
236 Dividends Declared
237 Contingent Liabilities
238 Unadjusted Credit Items

This account corresponds to Account 219 among the debits.

239 Reserve for Depletion
240 Accrued Depreciation

This is subdivided on the general ledger into separate accounts, viz.:

240 (a) Accrued Depreciation—Development
240 (b) Accrued Depreciation—Structures
240 (c) Accrued Depreciation—Equipment
240 (d) Accrued Depreciation—Camp
240 (e) Accrued Depreciation—Miscellaneous

241 Other Reserves

This is subdivided on the general ledger into separate accounts, viz.:

241 (a) Reserve for Insurance
241 (b) Reserve for Uncollectible Accounts
241 (c) Reserve for Federal Income and Profits Taxes
241 (d) Reserve for Contingencies

242 Capital Stock Outstanding
243 Capital Stock Subscribed
244 Surplus
245 Undivided Profits
246 Profit and Loss

Investment in Mine Plant and Equipment Accounts

The accounts in this classification are designed to show in detail the investment in mine, plant, and equipment, and in the aggregate should be in agreement with the balance in the controlling balance sheet Account 202.

All expenditures connected with the acquisition, construction, and development of the mine plant and mine equipment are charged to these accounts. Such expenditures include payments for contract work, wages, materials, supplies, and miscellaneous items. Incidental revenues received during the initial construction period are credited to Revenue Incident to Construction, Account 36 (see below). If returns from sales of coal taken out in the course of the initial period are small and not in excess of the cost of production, they may, at the end of the development period, be credited to Development, Account 1. There are extraordinary instances, however, where the gross returns from such coal when credited to Account 1, result in a credit balance in that account. In such cases, Account 1 should be credited with an equitable allowance for the cost of producing such coal (in practice this cost cannot be accurately computed) and the Coal Sales account to which the returns are credited should be charged. In the former case allowance may or may not be made for the depletion value of the coal taken out. In the latter case the depletion amount should be computed and charged against the returns. If the construction period extends beyond one year, depreciation should be computed on the depreciating assets used during construction and such cost should be charged to General Expenditures, Account 39. Royalties paid during the development period should be charged to Development, Account 1, unless they are recoverable out of future production (see Account 84 below), in which event only the proportion of such charges applicable to the construction period should be so charged, the balance being charged to Royalty Advances, Account 218 (b). After the company begins regular mining operations, all costs covering additions to or betterments of the original mine plant and equipment, excepting items of minor importance (see under "Structures" and "Equipment" for explanation of minor items), are also charged to these asset accounts.

The accounts pertaining to investments in mine plant and mine equipment are grouped in four general classes, as follows:

I. *Development Accounts.* At the close of the development period and after starting operations, development accounts are charged with the cost of sinking or driving more than 50 feet, through rock or material other than coal, the shafts, planes, slopes, or tunnels necessary to develop the mine or some specific area of coal. This cost includes grading, timbering, track labor, etc. The cost of all entry work on tunnels less than 50 feet in length, driven through materials other than coal is charged to Driving Entries, under "Dead Work" in operating expense.

II. *Structures Accounts.* In addition to the original investment, structures accounts are also charged with subsequent additions and betterments. The cost chargeable to investment accounts for betterments is the excess cost of new parts over the current price of those retired. Items of minor importance involving an expenditure of less than $100 are charged to an expense account.

III. *Equipment Accounts.* In addition to the original investment, equipment accounts are charged with subsequent additions and betterments of major importance. "Minor items (see article 222 of Regulations 45 relating to the income tax and war profits and excess profits tax under the Revenue Act of 1918), such as trackage, cables, trolley, mules, mine cars, tools, etc., which are added after the mine has been developed and equipped to its normal and regular capacity, and which represent current expenses necessary to maintain the normal output because of increased length of haul or depth of working consequent on the extraction of coal, and the replacements of such minor items should be charged to expenses." It is to be noted that these items are not those which are added to increase output or those which represent an improvement having a tendency to increase the net income over that obtainable from the investment previously employed in equipment.

IV. *General Expenditures.* Upon the completion of the initial construction work, the general expenditures should be charged to development, structures, and equipment accounts

upon some equitable basis. Wherever possible, general expenditures should be allocated direct to these accounts. The other general expenditures should be distributed over the plant and equipment items as suggested by conditions and circumstances.

Subordinate Plant and Equipment Account Classified

The primary accounts included in the aforementioned four groups are as follows:

I. Development

Number	*Title*
1	Development
	II. Structures
4	Tipple
5	Tramways Outside
6	Power Plant
7	Blacksmith- and Machine-Shops
8	Railroad Trackage
9	Miscellaneous Operating Buildings and Structures (Classified)
	III. Equipment
10	Tipple Equipment
11	Mine Rail and Fastenings
12	Mining Machines
13	Mine Cars
14	Other Mechanical Haulage Equipment
15	Drainage Equipment
16	Ventilation Equipment
17	Power Plant Equipment
18	Power, Light, and Signal Lines
19	Telephone Lines
20	Barn Equipment
21	Live Stock
22	Water Supply Equipment

This account includes any equipment used to obtain water for mine operations in localities where this is necessary. It

does not include the mine drainage equipment or equipment used in sprinkling entries.

23 First-Aid and Accident Equipment
24 Machine- and Blacksmith-Shop Equipment
25 Automobiles
26 Tools and Miscellaneous Equipment
27 Furniture and Office Equipment

IV. General Expenditures

30 Construction Expenses
31 Unapplied Construction Materials

At the close of the construction period the value of this material on hand is charged to Account 209.

32 Unfinished Construction Contracts

Advances and partial payments on contracts are charged to this account. When contracts are completed this account is credited and the proper accounts of Groups I, II, and III are charged with the total cost of the contracts.

33 Supervision and Engineering at Mine
34 Salaries and Expenses—General Office
35 Taxes
36 Revenues Incident to Construction
37 Interest During Construction
38 Insurance
39 General Expenditures

Investment in Tenant Buildings and Camp

The accounts in this classification are designated to show in detail the investment in tenant buildings and camp property. In the aggregate, they should be in agreement with the balance in the controlling balance sheet account 203. They are as follows:

Number *Title*

43 Streets, Parking, and Sidewalks
44 Water Supply and Sewerage

45 Town Lighting
46 Tenant Dwelling and Appurtenant Structures
47 Hotels and Boarding Houses
48 Other Non-Mining Structures (Classified)
49 Miscellaneous Camp Property (Classified)

Property Retired and Replaced, and Property Abandoned

When a major item of property or equipment, such as a shop, part of the power plant, machinery, building, etc., is retired from service and replaced with property serving like purpose, the fixed asset account should be charged with the cost of the new property and credited with the following:

1. Any amounts realized from the sale of the scrap or salvage of the replaced property, less the cost of disposing of this scrap and of demolishing the property.
2. The depreciation on the replaced property which has been accrued. The corresponding debit for this amount should be made to the depreciation reserve account.
3. The difference between the total of the above two amounts and the value at which the retired property was carried on the books.

The amount of (3) should be charged to current expense unless it is thought advisable because of the large amount involved to charge it direct to Profit and Loss, or to Deferred Debits, together with the cost of demolishing the property, if that cost exceeds any realization made from the scrap or salvage. This procedure, in so far as it is applicable, applies also to any abandoned property.

If the property retired and replaced is of minor importance, and is replaced in kind without betterment, the cost of replacement in excess of depreciation accrued plus any returns from salvage, should be charged to maintenance expense, and no adjustment should be made in the investment accounts.

If the property abandoned is of minor importance, the proper

investment account should be credited with the amount at which the asset is carried on the books and the loss through abandonment, over and above the depreciation accrued plus the value of salvage materials, should be charged to maintenance expense.

In the last two cases reserve for depreciation is charged with the amount of depreciation accrued to date of replacement, and Materials account 209 with the salvaged material.

Income Revenue and Expense Accounts

Income accounts are as follows:

Number *Title*

55 Coal Sales

Subdivided on the general ledger into:

55 (a) Sales—Coal Produced
55 (b) Sales—Coal Purchased
55 (c) Sales—Retail at Mine

56 Charges to Coal Sales

Subdivided on the general ledger into:

56 (a) Coal Purchased
56 (b) Allowances and Adjustments

Allowances are sometimes charged direct to Sales.

57 Coal Inventory—Debit or Credit

This account is to be credited with the value at cost of the coal produced during the month but held in storage and charged with the cost value of the coal sold from storage, Account 211 (a) being credited.

58 Miscellaneous Income

The subdivisions under this general heading show the net income derived from "indirect mining properties" and "non-mining properties," and other income debits and credits. The gross income from each class of property or activity is

charged with the expenses incidental thereto, such as labor, supplies, taxes, insurance, and depreciation. These income accounts are as follows:

58 (a) Dwellings and Camp
- (1) Camp Rentals
- (2) Camp Upkeep

58 (b) Mercantile Operations—Net
58 (c) Farming Operations—Net
58 (d) Coke Plant Operations—Net
58 (e) Washery Operations—Net
58 (f) Royalties Earned
58 (g) Interest and Discounts

Further subdivided into:
- (1) Purchase Discounts
- (2) Sales Discounts
- (3) Interest on Funds and Securities Owned
- (4) Interest on Current Loans and Notes Payable

58 (h) Dividends on Stocks Owned
58 (i) Commissions on Pay-Roll Deductions
58 (j) Miscellaneous Income

59 Other Charges
Subdivided as follows:

59 (a) Interest on Long-Term Debt
59 (b) Federal Income and Profits Taxes

Other General Ledger and Subsidiary Accounts

The titles of the following groups of accounts are the general ledger accounts which act as controlling accounts over the primary accounts set forth in each group. The primary accounts are summarized in subsidiary records, and in the aggregate must be in agreement with their respective controlling general ledger accounts.

I. *Operating Revenues.* The accounts in this group, which arise out of activities directly connected with coal mining operations, are as follows:

Number *Title*

63 Debit or Credit from Explosives and Supplies Sold to Miners
64 Revenue from Smithing
Miners are customarily charged a stated amount monthly for blacksmith services, such as sharpening picks.
65 Revenue from Heat, Light, and Power
66 Miscellaneous Debits and Credits to Operations

II. *Operating and Maintenance Expenses.* For the purpose of the cost reports the charges to the accounts given below should be recorded so as to draw a distinction between labor and supplies. The labor of unloading materials should be charged as a part of the cost of such material to the proper materials account under Account 209. The blacksmith labor of making tools or finished material parts for material stock should likewise be charged to Materials. The blacksmith labor of sharpening tools, drills, and bits should be charged to Supplies under the proper mining account and not to Labor. All services rendered the company by outside firms on repair work, etc., even though such services consist exclusively of labor should be charged to Supplies.

The Operating and Maintenance Expense accounts are as follows:

Number *Title*

71 Mining
71 (a) Pick Mining
Payments to hand-miners on tonnage basis.
71 (b) Machine Mining
Subdivided as desired, for instance:
(1) Cutting
(2) Drilling, Shooting, and Loading

(3) Allowances (other than Narrow Work)

(1) and (2) above are assumed to be on a tonnage basis.

71 (c) Other Mining

Wages paid men who are indirectly engaged in mining but whose wages are not on a tonnage basis, such as powdermen, or other indirect mining labor which cannot be apportioned accurately to other mining accounts.

71 (d) Company Coal

Labor of "Company Men" and supplies used in reclaiming coal dropped along entries and haulage ways. The word "Company" in this account is the term used in mining and is merely intended to distinguish between the coal produced on contract by miners from that produced by the so-called "Company Men" paid on other than a tonnage or contract basis, which production is obtained from a house-cleaning of the mine, so to speak. In this discussion it is considered that the miners are paid on a tonnage basis.

71 (e) Narrow Work

(1) Pick Mining
(2) Machine Mining

71 (f) Machine Repairs

72 Timbering
73 Ventilation—Operation and Maintenance
74 Drainage—Operation and Maintenance
75 Dead Work

75 (a) Grading
75 (b) Removal of Slate and Waste

75 (c) Driving Entries

Other than coal entries. For entry work through coal see Account 71 (e).

76 Haulage

This account may be subdivided to show haulage costs "inside" and "outside." If it is possible to segregate the laying of mine track extensions from track maintenance, a separate account may be provided for Track Laying. The subdivisions are as follows:

76 (a) Haulage—Animal Operation
76 (b) Haulage—Mechanical Operation
76 (c) Haulage Equipment—Maintenance

77 Tipple—Operation and Maintenance

77 (a) Dumping and Loading
77 (b) Box Car Loading
77 (c) Screening and Preparation

This account includes ordinary screening and preparation costs of bituminous mining. Washery operations in anthracite mining are included under income account, Washery Operations.

78 Power—Operation and Maintenance

The National Coal Association recommends the charging of all power expenses under one grouping and the redistribution of such costs to the expenses for the various operating activities consuming power, on the basis of power consumed. This, no doubt, is correct procedure in large operations. In small mines it is not always possible to do so and even if the distribution is made it is unnecessary. It would be better to devote attention to the correct distribution of labor and supplies. The accounts in this classification are:

78 (a) Generating Power
78 (b) Boiler Fuel

78 (c) Water
78 (d) Power Equipment—Maintenance
78 (e) Power Purchased

79 Other Operating and Maintenance Expenses

79 (a) General Inside Labor and Supplies
79 (b) General Outside Labor and Supplies

80 Mine Overhead

80 (a) Superintendence
80 (b) Engineering
80 (c) Mine Office
80 (d) Maintenance Mine Structures
80 (e) Mine Automobile
80 (f) Welfare Work
80 (g) Accidents and Casualties
80 (h) Compensation Insurance
80 (i) Insurance—General
80 (j) Miscellaneous

III. *Fixed Charges to Mining.* The instructions under these accounts present one view of how to compute depletion, development, amortization, and depreciation charges. The various viewpoints will be discussed later.

Number *Title*

81 Depletion

The charge to this account should be based upon the tonnage mined and so computed that on the estimated date of the exhaustion of the mine a reserve will have been provided sufficient to equal the original cost of the coal (or its fair market value as of March 1, 1913, if the mine was operated prior thereto). The charge in any month is to be determined by using a fixed rate per ton for the tonnage mined. This rate is ascertained by dividing the original cost, or fair market value as of March 1, 1913, of the tract, deposit, or lease, less

the value of the surface at the time of the acquisition of the property (or, in latter case, as of March 1, 1913), by the recoverable tonnage estimated at the date of the purchase (or as of March 1, 1913). If, during the operation of the mine, it is found that the original estimate of recoverable tonnage is in error, or if the return of the capital would be unreasonably deferred by following the above rule literally (say 100 years),[1] an adjusted ton rate for depletion should be used.

82 Development Amortized

The charges to this account are determined as follows: Divide Development account at the end of the year (less deductions for depreciation of development to the beginning of the year) by the estimated tons of coal in the ground at the beginning of the year to be recovered through such development. The result from such computation will be the rate per ton for the year. Multiply the number of tons produced during the year by this rate to determine the amount to be charged to this account, and credited to Accrued Depreciation of Development for the year.

83 Depreciation

The subaccounts hereunder should include a monthly charge which, during the service life of the structures or equipment charged to investment will provide a reserve sufficient to equal the original cost, less salvage. This rule may be applied to mine structures and equipment, considered in groups rather than by individual units, in order to avoid accounting refinements.

83 (a) Depreciation of Structures

83 (b) Depreciation of Equipment

To avoid fluctuations in the monthly costs per ton, the known or estimated annual depreciation charges (based on estimated life) should

[1] See "Income Tax Procedure, 1920" by Montgomery, pages 776 to 779.

be divided by the estimated production for the year and depreciation should be accrued monthly on the basis of the tons produced. These accounts should be charged with an amount equal to the number of tons produced multiplied by the tonnage rate thus determined, adjusting any differences at the end of the year.

84 Royalty—Current

If the royalty payment is calculated on the actual tonnage of coal mined during the period, such payment is to be charged to Royalty—Current.

If the royalty agreement provides, as above, that the royalty payment shall be calculated on the actual tonnage mined during a stipulated period, but stipulates further that if the coal mined during that period is less than a certain tonnage, there shall be paid a specified minimum amount and that the amount by which the specified minimum sum exceeds the payment calculated at the rate agreed on for the actual tonnage mined shall not be recoverable nor allowed as an advance payment on coal to be mined in the future—when such stipulation is made, the minimum royalty should also be charged to Royalty—Current.

Suppose the royalty agreement, while requiring payment for a minimum tonnage during a specified period, permits the operator to mine at a future time, without further payment of royalty, tonnage equal to the difference between the specified minimum paid for and that actually mined. If less than the minimum is mined there should be charged to Royalty—Current an amount equal to the number of tons mined multiplied by the royalty rate per ton, and the difference between this amount and the minimum payment should be carried to an account entitled "Royalty Advances." If more than the minimum is mined, an amount equal to the number of tons

mined multiplied by the royalty rate per ton should be charged to Royalty—Current.

In the case mentioned in the preceding paragraph, when the actual tonnage mined during one of such future periods exceeds the minimum royalty payment, the Royalty Advances account should be credited with the amount of such excess.

In the event that minimum royalties charged to Royalty Advances are of such large amounts as to preclude the possibility of producing enough tonnage to recover the amount on future production, then such amounts as cannot be recovered later should be charged to Royalty—Current during the year when paid or when such fact is established.

IV. *Selling Expenses.* Accounts in this group are as follows:

Number	*Title*
85	Commissions
86	Advertising
87	Salesmen's Salaries and Expenses
88	Officers' Salaries and Expenses
89	Office Salaries and Expenses
90	Miscellaneous

V. *General Expenses and Administration.* This classification includes the following accounts:

Number	*Title*
91	Officers' Salaries and Expenses
92	Office Salaries
93	Office Expenses
94	Legal Expense
95	Uncollectible Accounts
96	Taxes
97	Miscellaneous

II. Special Records

Coal Sales Register

The principal books of accounts are those kept by every corporation and call for no special mention. The coal sales register and pay-rolls are the only records that present forms in any way peculiar to the business.

Where coal is consigned direct to its destination from the mine office, a convenient form of sales register is a manifest of billing, illustrated in Form 1. This form, if sufficient lines are provided, lists all railroad cars loaded each day and shows the name of consignee, destination, routing, car number and initial, marked tare, actual weights—gross, tare, and net—size of coal, and amount of freight prepaid for each car, if any. When received at the general office, the prices and extensions on each car are entered in columns provided for that purpose at the right-hand side. Sheets are numbered and carried in a loose-leaf binder until the end of the year, when they are bound for permanent record. Invoices, numbered in order, are made out in duplicate from information shown on the manifest. The original is mailed to the customer and the duplicate is kept on file in numerical order. The number of the invoice for each car is shown on the manifest.

Postings to the customers' accounts in the customers ledger are made either from the manifest or from the duplicate invoices, preferably the latter, the invoice number being recorded in the ledger accounts. At the end of the month the total charges to customers, shown by the manifest pages, are covered by journal entry charging Accounts Receivable—Sales Office and crediting Sales—Coal Produced. The credits to coal customers during the month from the cash book are likewise handled as individual credits to customers' accounts in the accounts receivable ledger and as a credit in the aggregate to Accounts Receivable—Sales Office control account. Credits other than cash, if handled as charges against Sales, may be summarized with the charges on

THE COLONY

Daily Report of Shipments from THE DINES MINE No. ____

INSTRUCTIONS—All Weights Should Be Shown in Cwt., Thus: 765 (instead of 76500), Leaving Off Last Two Ciphers.

		Our Order No.		SALESMAN	CONSIGNEE	DESTINATION	Customer's Order No.	Line No.	Via	Kind of Car	Car Number	Initial	Capacity	Marked Tare
								1						
								2						
								3						
								4						
								5						
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								44						
								45						
								46						
								47						
								48						
								49						
								50						
					Do Not Roll This Manifest—FOLD IT	TOTALS								

No. Empty Cars on Track Box Stock Gondolas

All Cars Loaded to Space Capacity
All Open Cars Loaded to Full Visible Capacity

Form 1. *Coal*

the manifest sheets. Otherwise they are handled by special journal entries. The above entries contemplate the operation of the customary controlling account in combination with the subsidiary accounts receivable ledger.

Pay-Roll Sheet

The pay-rolls and their distribution are made at the mine office. In some cases impression copies are kept for mine office record while the original rolls are forwarded to the general office for the checking of extensions and deductions and the writing of pay checks. The pay checks are then returned to the mine office for distribution. In other cases, the rolls are audited and the checks written at the mine office and the rolls are sent to the general office after pay day. Some companies pay in cash, sending out special paymasters from the general office for this purpose.

The pay-roll sheets, as illustrated in Form 2, are usually made

COAL COMPANY MANIFEST No.__________

Via THE UNION PACIFIC R.R. CO.__________192___ (THESE COLUMNS FOR USE OF DENVER OFFICE)

ACTUAL		NET WEIGHTS						FREIGHT PAID			Price	AMOUNT						Cr. Memo or Invoice No.	Line No.
Gross	Tare	Lump	Grate	Nut	Slack	M.R.		Rate	Amount	Check No.		Lump	Nut	Grate	Slack	M.R.			
																			1
																			2
																			3
																			4
																			5
																			6
																			7
																			8
																			9
																			10
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																			48
																			49
																			50

Manifest Tonnage This Date __________

Tonnage Brought Forward __________ Prices Correct:

Month's Tonnage on Manifest to Date __________ __________

NOT NEGOTIABLE

This shipment is tendered and received subject to the terms and conditions of this Company's Uniform Bill of Lading. All conditions to the contrary herein are cancelled.

THE COLONY COAL COMPANY,

__________ By__________

Agent for R. R. Co. General Manager

Sales Register

to fit a loose-leaf binder and later bound permanently. The pay-roll period is usually semimonthly. However, the pay-roll distribution furnished at the end of the month covers both pay-roll periods for the month.

Deductions are made on the pay-roll from the employees' earnings for powder, fuse, and other supplies, for house rent, light, doctor, hospital fees, union dues, store bills, coupon books or scrip received for the purchase of merchandise at the company store, for coal, insurance premiums, etc. So many deductions are made that this side of the pay-roll causes as much, if not more, work than the earnings side.

The daily tally sheet received by the mine clerk from the weigh boss is the source of entry for the earnings of miners paid on a tonnage basis. Time rolls showing the class of employees and nature of work performed are the source of entry for the earnings of Company Men. A weekly or semimonthly report furnished

Page No. ______ PAY ROLL ________________ MINE ___

Check No.	1 / 16	2 / 17	3 / 18	4 / 19	5 / 20	6 / 21	7 / 22	8 / 23	9 / 24	10 / 25	11 / 26	12 / 27	13 / 28	14 / 29	15 / 30	31	Total	MINING Tons	Rate	Amount

Form 2. (a) Pay-

Correct: ______________________
Pay Roll Clerk
Inspected and Approved by: ______________________
Superintendent
Calculations, Rates and Extensions Correct: ______________________
Auditor

	Total Deductions	Overdrawn	NAME AND OCCUPATION	Check No.	Balance to Pay	Bank Checks or Remarks	Over-drawn Accounts Collected	Store	Board	Rent
1										
2										
3										
4										
19										
20										

Form 2. (b) Pay-

______ HALF ______ 192_

NARROW WORK				BOTTOM LABOR				TOP LABOR				CAMP LABOR				SUPT. AND MISC.			Total Earnings	Line No.
	Yds.	Rate	Amount	Date	Hrs.	Rate	Amount	Date	Hrs.	Rate	Amount	Date	Hrs.	Rate	Amount		Rate	Amount		
																				1
																				2
																				3
																				4
																				18
																				19
																				20

Roll Sheet (face)

Page No.______

DEDUCTIONS																
Doctor	Smithing	Team Coal	Light	Toilets	Insurance	U.M.W.A.	I'dn Check	POWER					SCRIP		Time Check No.	Time Check Amount
								No.	Amount				No.	Amount		

Roll Sheet (reverse)

by the mine engineer or mine foreman is the source of entry for "Narrow Work" and other special allowances to miners not reported on the daily time rolls.

The Mine Account Books

It will be noted from the journal entries to follow that the system herein described calls for the keeping of some principal record books, such, for instance, as a cash receipts book, both at the mine office and at the general office. A convenient form for the mine records and one that affords a better means of checking the mine office work than a monthly summary of distributions compiled from the ordinary form of record book, is a duplicating columnar record. This record is arranged with an original and duplicate sheet for each page. The original is perforated at the left margin. A carbon sheet is placed between the original and duplicate sheets and entries are made on the original with indelible pencil. At the end of the month the columns are totaled and the original sheets are torn from the book and forwarded to the general office to support the journal entry on the general journal. The duplicate sheets bound in the book comprise the mine office record.

III. Peculiar Problems in Coal Mine Accounting

Important Question in Coal Mining Accounting

In this short chapter it is not possible to cover thoroughly all the mooted questions concerning coal mine accounting.[2] The most important of these questions are:

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[2] The interested student of the subject should not fail to secure from the secretary of the National Coal Association, Commercial Bank Building, Washington, D. C., a copy of the "Report and Suggestions of Committee on Standard System of Accounting and Analysis of Cost of Production," submitted at the annual meeting of the Association in Chicago, May 21, 22, 23, 1919. He should also ask the Secretary of the Association for a copy of "Bill of Complaint and Affidavits in Support of Application for Temporary Injunction," filed March 10, 1920, in the Supreme Court of the District of Columbia in the case of the Maynard Coal Company vs. Federal Trade Commission. The General Policies Committee of the anthracite industry has worked out a unified method of cost accounting and this should be obtainable through the National Coal Association. The student should also obtain from the secretary of the Federal Trade Commission at Washington copies of their accounting forms and instructions issued to coal mine operators. The two bodies are not yet in agreement on several phases of coal mine accounting and their arguments serve to bring out forcibly the real problems of accounting in this business.

1. What is the correct method of computing depletion of the coal deposits and depreciation of development and physical improvements?

2. What distinction should be made between capital and operating expenditures?

3. Should current costs include charges which will make reasonable provision for possible losses through catastrophes in this hazardous business?

4. Is the cost of coal used by the operator for his own consumption a charge against cost of production and, if so, how will cost of such fuel be computed?

5. Should the operating expense accounts be segregated so as to maintain a distinction between maintenance and operating costs of each mining activity?

6. Should the net income or loss from mine camps be recorded as separate and independent operations from that of mining coal, or should such costs and credits be included with the operating expense and revenue accounts in computing the cost of mining coal?

These questions will be considered briefly.

1. (a) Methods of Computing Depletion

The method of depletion set forth under Account 81 is in agreement with the ideas of the National Coal Association. It differs from the plan of the Federal Trade Commission in respect to permitting revaluation of the mine as of March 1, 1913. The National Coal Association is endeavoring to conform its methods with the Treasury Department regulations in reference to income and profits taxes, and also to protect itself in respect to ascertaining the correct cost of producing coal. The Federal Trade Commission's efforts have been toward finding out cost and selling prices of coal.

The Treasury Department permits revaluation as of March 1, 1913, because, it is stated, appreciation prior to that date represents income, and if revaluations for subsequent depletion and

depreciation charges were not permitted, the result would be taxation of income accrued during a period when an income tax law was unconstitutional. The members of the Federal Trade Commission state, in effect: "We are not concerned with income taxes but with costs and no revaluations will be allowed."

The writer thinks the stand is well taken by the Federal Trade Commission in respect to *depreciating* items and does not agree with the National Coal Association that two complete sets of records are necessary; the one to record depreciation costs, without revaluations, and the other to compute such costs on the basis of revaluations for income tax purposes.

Depreciation costs represent the reimbursement, out of current income, of an amount to offset money out of pocket, not otherwise charged as a cost against such income. Any value present in physical assets over the amount out of pocket therefore is due either to their increased value as a whole or to the higher cost of replacement.

As the value of the whole is greater than the sum of values of its component parts, because these have been welded into an operating organism, it follows that, stripped of their connections and relations with each other, this additional value would not be present in the component parts. With a going concern the parts may wear out and be replaced without detracting from such additional value. Therefore it is felt that such value should not be an item subject to depreciation, assuming that it were possible to calculate it.

As to depreciation based on replacement value, most authorities are agreed that such is not a true basis on which to compute cost of current production. However, the prudent operator may make provision for higher replacement costs by creating a surplus reserve out of current undivided profits.

Depletion on the basis of revaluation is another question. The mining business is speculative. An operator buys coal land knowing very little about what he is getting. Suppose he buys a property in 1910 for $50,000, develops it and before March 1,

1913, finds that his mine is worth $1,000,000, which value should he use for depletion, the first or second? The additional value thus discovered has always been considered one of the recompenses to the mine-owner, and therefore when the value has been once established he should be permitted thereafter to charge depletion on such revaluation figure. The writer goes further than the National Coal Association and believes that, for the purpose of cost-finding, revaluations of the mine should be made at stated regular periods. When a value is established in excess of cost due to discovery of better or larger quantities of deposits, such value should be used as the depletion basis, but the basis should not be less than the original cost to the present owner.

Many views have been expressed in regard to depletion. Some favor allowing for interest on the value of deposits. Some argue for a decreasing rate throughout the life of the mine on the assumption that the operator has really paid more for the coal taken out during the earlier years of production. Some say no depletion should be charged until there occurs a shrinkage in value of the mining property as a whole below its cost or original commercial value.

1. (b) Amortizing Development Costs

The method of amortizing development costs given under Account 82 is in accordance with Article 210 of Treasury Department Regulations 45 relating to the income and profits taxes under the Revenue Act of 1918.

In respect to handling of development costs in reports to the Federal Trade Commission the instructions read:

> For the purpose of reports made to the Commission, development is defined to cover only the main shaft, slope or planes, and the main tunnel or entry which must at all times during the operation of the mine be left open for the purpose of providing a mine gangway or haulage way, to be used until the total tonnage of coal has been extracted. All cross entries, rooms, etc., should be treated as charges against operations. The statement prepared in

> connection with this account should show (1) the actual cost of sinking the shaft, slope or plane, and the main tunnel with its accompanying air courses and drainage facilities, and (2) the estimated number of tons of coal in the property at the time of acquisition.

In respect to the method of depreciating or amortizing the development costs carried as an asset or deferred charge, the Federal Trade Commission instructions under the operating account, Amortization Development, read:

> The per ton rate for this account shall be obtained by dividing the cost to the present owner of driving the main tunnel, shaft, slope or drift, plus the estimated cost of the number of feet of main tunnel to be driven, by the estimated tonnage recoverable through such development. The charge to this account in any month shall be determined by multiplying the tonnage obtained through this development by the per ton rate.

The National Coal Association, in their committee report (referred to later), recommends that charges to capital for development costs cease when the mine has been developed to its planned output capacity. It states that thereafter there will be few if any permissible charges to that account.

All authorities are agreed that development costs should be confined to main entries, but it will be noted that the National Coal Association says that after the mine has been developed to its planned output even such charges should cease and future costs be charged to operations. The Federal Trade Commission rulings differ from the National Coal Association recommendations in that the former anticipate future development costs by estimating such costs in advance of actual expenditure and distribute the cost to operating expenses on the basis of tons produced at a rate per ton determined by dividing the total estimated cost of development by the estimated recoverable tonnage through such development.

Attempts are made under some methods to localize certain portions of the development costs to the coal produced from

certain sections of the mine. If any material differences exist it may be proper to make such distinctions at times, but in most cases development costs may be accounted for more practically, and with sufficient accuracy, without separation into parts. The Federal Trade Commission method is objectionable because it anticipates costs by means of estimates. Furthermore, in view of Article 222 of Regulations 45, it would seem that the National Coal Association is more in harmony with the Treasury Department than the Federal Trade Commission as to the proper method to be used. In the opinion of the writer the method suggested by Article 210 of Regulations 45, above referred to, is the best method from an accounting viewpoint for general application.

This method as compared with the Federal Trade Commission method may be shown best by the illustration given below. The life of the mine and size of figures used in the illustration are intentionally reduced to nominal amounts for the sake of clearness. Life of the mine is assumed to be 3 years. Development costs generally will be largest during the first or development years of the mine, and thereafter decrease in amount each year. We shall assume development costs to be \$5 in the first year of operation, \$3 in the second year, and \$2 in the third year; the estimated quantity of recoverable coal to be 20 tons; and the rate of production for the first year to be 5 tons, for the second year 5 tons, and for the third year 10 tons.

	Years of Operation		
	First	Second	Third
1. Amount invested beginning of year	None	\$ 3.75	\$ 4.50
2. Development charges during year	\$ 5.00	3.00	2.00
3. Total, (1) plus (2)	\$ 5.00	\$6.75	\$ 6.50
4. Estimated tons in ground beginning of year	20	15	10
5. Rate per ton	\$ .25	\$ .45	\$ .65
6. Production during year—tons	5	5	10
7. Development amortized during year	\$ 1.25	\$ 2.25	\$ 6.50
8. Investment balance forward to next year	\$ 3.75	\$ 4.50	None
9. Estimated tons in ground end of year	15	10	None

The method requested by Federal Trade Commission is as follows:

	Years of Operation		
	First	Second	Third
1. Development charges first year...........	$ 5.00		
2. Estimated cost subsequent development...	5.00		
3. Total, (1) plus (2)......................	$10.00		
4. Estimated tons recoverable...............	20		
5. Rate per ton each year...................	$ .50	$ .50	$ .50
6. Production during year—tons.............	5	5	10
7. Development amortized....................	$ 2.50	$ 2.50	$ 5.00

The illustration, of course, is not true to all cases for we have assumed our estimate of future development costs to be in agreement with actual costs. It will serve, however, to illustrate the two methods.

It will be noted that the Federal Trade Commission method effects a higher charge against the first two years. Such distribution is not true to fact, for it is accomplished by charging against present production a portion of the cost of developing the main entries to serve future production. The development of main entries used by present production will also serve future production, and future production should bear its proportion of such costs; but the converse is not true. The cost of production increases with the depth of workings, and the first method reflects current costs more accurately. The method indorsed by the National Coal Association would cause all development costs incurred after the mine had reached a normal output to be charged to operations of the year in which they were incurred. This would have an effect similar to that of the Federal Trade Commission method, namely, the production of a given year would be burdened with its share of the development costs, plus a portion of that applicable to future production, and production of a later year would be relieved of its just proportion of such costs.

In favor of the Federal Trade Commission method the following arguments are advanced:

Costs of mining increase with depth of workings and unless present production is made to share a portion of costs applicable to future production, the time will arrive when further extraction of coal cannot be made without loss to the mine operator and consequently he must stop operations. In that event the unmined coal will be an economic loss to society. It is also contended that the basic value of development for depreciation charges is the cost of all development in relation to all production and not merely a portion of the completed mine development in relation to a portion of the production. The writer thinks that considerations of practicability should govern.

1. (c) Depreciation Rates and Methods

The method of depreciation given under Account 83 conforms more with the instructions of the Federal Trade Commission than with those of the National Coal Association. Both methods (described hereafter) conform with the Treasury Department regulations and may be applied with equal propriety, so far as customary practice is concerned, to suit individual conditions. The method given under Account 83, in conjunction with preliminary instructions, set forth under "Investment in Mine Plant and Equipment Accounts," is an attempt to combine the two ideas.

In general there are two methods of depreciation widely used, and a discussion of these two methods is sufficient to bring out the special problems of depreciation as applied to coal mining. One is the commonly known "straight-line method," under which the service life of each asset is reckoned, and the loss of value for each year determined by dividing the original cost of the asset by the number of years or periods in the service life. Under this method, if the cost of depreciating property is unchanged, the charges for each period will be equal regardless of the amount of coal extracted.

The following is a table of depreciation rates obtained from the Department of Natural Resources under the Commissioner of Internal Revenue:

DEPRECIATION RATES—COAL MINES

Kind of Equipment	Estimated Life in Various Districts*					
	#1	#2	#3	#4	#5	#6
Tipple:						
Frame	Life of Property					
Steel	Life of Property					
Head Frame	Life of Property					
Power Plant	7	7	7	7	7	7
Motors	10	10	10	10	10	10
Pumps	5	10	7	5	7	7
Mine Cars	4	4	4	4	4	4
Mules, Horses	4	4	4	4	4	4
Cables and Haulage	2	2	2	2	2	2
Electric Equipment	7	10	7	5	10	7
Houses: Brick, Frame, Concrete	Life of Property					
Hand-Tools	1	1	1	1	1	1
Mining Machines	7	8	7	5	8	8
Timbers	Life of Property		6	6	6	10
Rails	5	10	8	5	10	10
Wire and Trolleys	7	10	7	5	10	7
Locomotives	10	10	10	10	10	10
Bee Hive Ovens		10	10	10	10	10
By-Product Ovens		12	15	15	15	15
Washeries	Life of Property					

* 1 Anthracite; 2 Pennsylvania Bituminous, West Virginia, Illinois; 3 Kentucky, Tennessee, Georgia, Ohio, Indiana; 4 Missouri, Kansas, Iowa, Arkansas, Oklahoma, Alabama; 5 Texas, North and South Dakota; 6 Wyoming, Montana, Colorado, New Mexico, Utah, and Washington.

The other method is a combination of the composite and output methods. It is "composite," in that depreciation is calculated on the plant as a whole. It is "output," in that the plant life is based on the total estimated production. The rate of charge-off is determined by dividing the whole plant investment by the estimated recoverable tonnage of coal. The number of tons produced periodically multiplied by the rate equals the amount of depreciation accrued for the period. Under

this method the amount of periodical depreciation charges is in proportion to the tonnage of coal extracted.

The Federal Trade Commission instructions read:

> In all cases depreciation of structures and equipment installed for the purpose of operating the mine is to be based upon the actual cost, less salvage value. It should not be prorated on a tonnage basis, but should be put on a percentage basis based on the estimated service life of the buildings or equipment. The amount of each yearly charge should be divided by twelve to arrive at a monthly figure which should be entered for structures and equipment separately.

The National Coal Association argues at length in favor of the output method, and their committee's "Preliminary Considerations" on this subject are as follows:

> Before discussing the details of an accounting system, it is useful to emphasize the fundamental truth that every coal mine consists of owned or leased coal deposits, plant, equipment and development.
>
> In the case of some mines, the greater cost will be the coal; in another, the equipment; and the cost of development will be, more or less, according to the physical conditions of each operation, but all these elements make a coal mine, and when the operating stage is reached their combined value as a mine is greater than the sum of their separate costs.
>
> They all depreciate together as the coal is exhausted, for when the coal is gone, or the right to the coal has elapsed, the plant and equipment have little or no value and the development is lost.
>
> Capital investment in a coal mine is not a permanent asset; it is only an outlay preliminary to the extraction of the coal; it is merely an advanced or deferred charge upon future income, which capital, if recovered, at all, must be recovered with the current expenses of operation out of the proceeds of coal sold.
>
> By dividing the cost of the mine by the total number of tons practically recoverable through present shafts and openings, the rate per ton necessary to redeem such cost will be found.
>
> In Coal Mining the exact unit for the measurement of work done is the ton of coal mined. It is also the exact unit for measuring depletion of mineral, wear and tear from use of equipment,

and exhaustion of development. Development is a mere easement, the value of which disappears when the coal is gone.

A coal mine being, as emphasized, made up of several elements, all depreciating as the coal is mined, such depreciation is composite, accruing at a rate concurrent with the rate of extraction. The necessary rate per ton being determined, the aggregate depreciation for any accounting period should, of course, as far as practicable, be distributed among the various elements in proportion to their respective costs or value.

The doctrine that measures depreciation of coal mine plant and equipment in terms of time (excepting, of course, some leasehold propositions) is fallacious, as tested by the further assertion that a completely equipped mine could be maintained indefinitely without depletion or wear and tear if no coal were mined, by minor repairs.

Therefore, we insist, as a general rule—excepting some leaseholds—that the correct measure of the depletion and depreciation experienced in mining coal is the ton of coal mined.

After a coal mine has been developed and equipped to its planned output capacity, charges to its Capital Account should cease, and thereafter there will be few if any permissible charges to that account.

Usually after one-third or one-half the life of the mine has elapsed, from time to time thereafter additions to power plant and major items of equipment will be necessary, and the Cost thereof should be set up in appropriate Additions and Betterment Accounts. For these an additional and separate depreciation rate based on the remaining coal or life of the mine will have to be established.

At the end of each month, Operating Account should be charged, and Depreciation credited with an amount equivalent to the depreciation rate multiplied by the number of tons mined during the month. At the end of the year Depreciation should be charged with the year's accumulation and the respective elements of the mine written off in proper proportion. . . .

In the case of mines operated under lease, . . . if the life of the lease is shorter than the probable period required to get all the coal the monthly charge to Operating Account and corresponding credit to Depreciation should be such proportion of the cost of the mine as one month is of the remaining term of the lease.

2. Distinction Between Capital and Operating Expenditures

For making this distinction the National Coal Association contends for the method shown (page 148) under subdivision III, Equipment, under "Investment in Mine Plant and Equipment Accounts" in the accounting classification. (See also answer to Question 1 for their views.) Any system, of course, is subject to abuse, but to those turning from the customary method to that herein set forth, which is in agreement with the National Coal Association and the Treasury Department regulations, it may appear that the bars are down and they can determine for themselves what should and what should not be charged to capital. This is true because the point of departure from the customary method rests on the determination of the exact time when the mine reaches normal capacity. In practice this is a very difficult problem.

3. Current Costs and Charges Against Possible Catastrophes

The Treasury Department decides this question for all businesses by the decisive and unequivocal answer—"No." In the foregoing accounts no such provision was made. The Federal Trade Commission will not permit such a charge. However, to quote W. B. Reed, Secretary of the National Coal Association, writing in the *Coal Review* of September 29, 1920:

> No insurance company will insure against the hazard of mine fires, explosions or the cave in of the surface. Practically the entire value in a coal mine may be wiped out by an explosion or some other catastrophe. . . . For this reason the operator should set up as an item of current cost an amount per ton which will reasonably insure against such a catastrophe. If this were a commercially insurable item it would be treated as an item of legitimate expense, not only on the standpoint of cost, but also as an item properly deductible under the income tax laws. Even though it is not so permitted by the Internal Revenue Bureau, and although the operator must pay taxes upon such an item, he should nevertheless make provision for it in his accounting,

and in any governmental price-fixing a reasonable amount should be allowed for such contingencies.

4. Cost of Coal Consumed by Operator as Related to Cost of Production

The National Coal Association committee report says, concerning the question of charging cost of coal used by the operator to cost of production:

> The cost of coal to the operator for his own consumption is what he could get for it in the market. If an unmerchantable product is used under the boilers, it should be charged at its cost of production. If cost of fuel is not included in cost of power, the accounts do not exhibit true cost. The true cost should be before the operator to induce him to estimate the possibilities of effecting savings by improving his plant or boiler room practice; also to estimate the possibility of effecting economy by purchasing power of outside service companies or through establishing central power plants. The tonnage consumed per annum under their own boilers by large producers is very large, and the cost thereof should be clearly shown.

The Federal Trade Commission instructions are:

> The commission does not allow the inclusion of a separate charge for power house fuel in operating costs. Such a separate charge would be a duplication, since the cost of production of such coal is already included under the several headings of Labor, Supplies and certain Fixed Charges.

On this point it would seem the Federal Trade Commission is in error. Suppose the combined cost of labor, supplies, and fixed charges in producing 1 ton of coal is $2.50. That ton of coal, after screening, is slack coal. Slack coal can be sold for $1.50 per ton. But it must be used for boiler fuel and the company consequently loses $1.50 by diverting it to such use. Or suppose that ton of coal was sold for $1.50 and another ton purchased from a neighboring mine at $1.50. In the latter case the Federal Trade Commission probably would not object to charging the cost of fuel to production costs. Why then object to the item when the coal is produced by the consumer? In the opinion of

the writer, it is in no sense a duplication of cost and the National Association ruling is correct.

5. Segregation of Operating Expense Accounts

The National Coal Association says that the separating of operating expense accounts made for the purpose of maintaining a distinction between maintenance and operating costs of each mining activity, is not customary and would, in many cases, be impracticable without the addition of a large force of timekeepers and supervisors.

The Federal Trade Commission says:

> Operators whose pay rolls, cost sheets or other records segregate these accounts (Maintenance and Repairs) from the general operating costs are required to report such expenditures separately. Operators who find it impossible or impracticable to segregate such items may report them under the heading of Operating Labor and Supplies.

Nothing impracticable should be required of an accounting system. In most cases, it would therefore seem best not to attempt a distinction in such cases. For instance, a pump man may both operate and repair pumps; trackmen may be engaged both in laying extensions of track and maintaining existing tracks.

6. Net Income or Loss from Mine Camps

On the question of whether the net income or loss from mine camps should be recorded as separate and independent operations from that of mining coal, or should be included with the operating expense and revenue accounts to compute cost of mining coal, Mr. Reed, Secretary of the National Coal Association says:

> Under the accounting practices now commonly employed by coal mining companies, all costs, both labor and supplies, expended in maintaining and repairing miners' dwellings as well as the income derived therefrom are recorded as separate and independent operations. The instructions prescribed by the

Commission require the inclusion of these expense items with all other labor or supply costs under the heading of maintenance and repairs. The upkeep of miners' dwellings is not a part of the direct cost of mining, but the net loss or gain of such dwellings may be a proper addition to or deduction from the total cost. The inclusion of these expense items in direct operating costs is not only a departure from the accounting practice now commonly employed, but is also incorrect and results in inaccurate and misleading information.

IV. Illustrative Statements and Entries

Statements and Entries

To illustrate how transactions recorded in accordance with the foregoing classification of accounts would appear in trial balances, journal entries, and monthly cost and income statements, there are set forth the following statements and entries, using actual figures. It should be noted that these statements and entries are to be used for problem purposes in accordance with instructions to follow.

1. Trial balance of general ledger, after closing, as of December 31, 1920.

2. Journal entries during the month of January, 1921. In practice, some of the entries shown are entered direct to the ledger accounts from the various books of original entry. Some companies, however, journalize all entries as shown.

3. Trial balance of the general ledger, as of January 31, 1921. The general ledger closing process of transferring nominal accounts to Profit and Loss occurs only at the close of the fiscal period, the balance in Profit and Loss after transfer of nominal accounts thereto being likewise transferred to surplus, reserve accounts, or undivided profits. Therefore, until the close of the fiscal year the nominal accounts, accumulated to date, are reflected in the monthly trial balances.

4. Income and cost statements for the month of January, 1921.

1. The trial balance, after closing, as of December 31, 1920, is as follows:

Account Number		*Title*	*Debit*	*Credit*
201	(a)	Coal Lands	$180,000.00	
202		Investment in Mine Plant and Equipment	225,000.00	
203		Investment in Tenant Buildings and Camp	85,000.00	
204		Investment in Mercantile Operations	35,000.00	
205		Investment in Farm	25,000.00	
209		Materials on Hand	30,000.00	
212	(a)	Accounts Receivable—Sales Office	100,000.00	
212	(b)	Accounts Receivable—Mine Office	2,500.00	
212	(c)	Employees' Overdrafts	1,500.00	
212	(d)	Accounts Receivable—Miscellaneous	6,500.00	
213	(a)	Accrued Profits Due from Collateral Operations	3,500.00	
213	(b)	Accrued Interest Receivable	1,200.00	
214	(a)	Notes Receivable—Trade	7,100.00	
214	(b)	Notes Receivable—Special	20,000.00	
217	(a)	First National Bank	22,000.00	
217	(b)	Citizens National Bank	10,000.00	
217	(f)	Cash Working Funds—General Office	125.00	
217	(g)	Cash on Hand—Mine Office	100.00	
218	(a)	Organization Expenses	2,000.00	
218	(c)	Insurance Premiums Paid in Advance	1,120.00	
230	(b)	Mortgage Notes		$ 60,000.00
231	(a)	Pay-Roll		22,000.00
231	(b)	Unclaimed Wages		250.00
231	(c)	Freight Payable		500.00
231	(d)	Vouchers		60,000.00
232	(a)	Accrued Taxes		2,000.00
232	(b)	Accrued Interest Payable		600.00
239		Reserve for Depletion		10,650.00
240	(a)	Accrued Depreciation—Development		1,175.00
240	(b)	Accrued Depreciation—Structures		4,000.00
240	(c)	Accrued Depreciation—Equipment		8,500.00
240	(d)	Accrued Depreciation—Camp		3,300.00
241	(b)	Reserve for Uncollectible Accounts		4,000.00

241 (c)	Reserve for Federal Income and Profits Taxes		40,000.00
241 (d)	Reserve for Contingencies		3,000.00
242	Capital Stock Outstanding		500,000.00
245	Undivided Profits		37,670.00
	Totals	$757,645.00	$757,645.00

2. The journal entries during month of January, 1921, are as follows:

Account Number	Entry No. 1	*Debit*	*Credit*
217 (a)	First National Bank	$90,080.00	
217 (h)	Cash on Hand—General Office	545.00	
212 (a)	Accounts Receivable—Sales Office		$80,000.00
212 (d)	Accounts Receivable—Miscellaneous		5,190.00
213 (b)	Accrued Interest Receivable		110.00
214 (a)	Notes Receivable—Trade		5,100.00
231 (b)	Unclaimed Wages		100.00
58 (g—3)	Interest on Funds and Securities Owned		80.00
58 (j)	Miscellaneous Income		45.00
	Distribution general office cash receipt book. January, 1921		
	Entry No. 2*		
231 (a)	Pay-Roll	45,000.00	
231 (c)	Freight Payable*	1,500.00	
231 (d)	Vouchers	55,000.00	
217 (a)	First National Bank		56,350.00
217 (b)	Citizens National Bank		45,000.00
58 (g—1)	Purchase Discounts		150.00
	Distribution of check register, January, 1921.		

* The item of Freight Payable. Coal is customarily sold F. O. B. mine, but when consigned to prepay freight stations the mine operator must prepay the freight. Such items are entered on the "Manifest" page for the day, (see description of manifest form under "Special Records") and with the coal are invoiced and charged therefrom to the customer. From the manifest these items are credited to Freight Payable and charges to this latter account are made from the check or voucher registers when paid.

Entry No. 3

209	Materials on Hand		10,000.00	
212 (d)	Accounts Receivable — Miscellaneous		125.00	
217 (b)	Citizens National Bank		40,000.00	
218 (b)	Royalty Advances		50.00	
58 (a—2)	Camp Upkeep		425.00	
	Maintenance	$353.60		
	Compensation Insurance	71.40		
	[Operating and Maintenance Expenses	$4,750.00]		
76 (c)	Haulage Equipment—Maintenance		1,830.00	
80 (a)	Superintendence		50.00	
80 (b)	Engineering		40.00	
80 (c)	Mine Office		100.00	
80 (f)	Welfare Work		350.00	
80 (h)	Compensation Insurance		1,880.00	
80 (j)	Miscellaneous		500.00	
	[Fixed Charges	$50.00]		
84	Royalty—Current		50.00	
	[Selling Expenses	$2,240.00]		
85	Commissions		1,000.00	
86	Advertising		850.00	
87	Salesmen's Salaries and Expenses		140.00	
89	Office Salaries and Expenses		150.00	
90	Miscellaneous		100.00	
	[General Expenses and Administration	$900.00]		
91	Officers' Salaries and Expenses		250.00	
93	Office Expenses		500.00	
94	Legal Expense		100.00	
97	Miscellaneous		50.00	
231 (d)	Vouchers			58,540.00
	Distribution voucher register, January, 1921.			

Entry No. 4

211 (b)	Coal in Transit	250.00	
212 (a)	Accounts Receivable—Sales Office	80,353.80	
231 (c)	Freight Payable		1,400.00
55 (a)	Sales—Coal Produced		79,203.80
	Distribution sales register, January, 1921.		

Entry No. 5*

	[Operating and Maintenance Expenses... $45,290.00]		
71 (a)	Pick Mining—Labor	20,000.00	
71 (a)	Pick Mining—Supplies	10.00	
71 (b)	Machine Mining—Labor	2,115.00	
71 (b)	Machine Mining—Supplies	15.00	
71 (c)	Other Mining—Labor	500.00	
71 (d)	Company Coal—Labor	75.00	
71 (e)	Narrow Work—Labor	1,600.00	
	(1) Pick Mining....... $1,400.00		
	(2) Machine Mining... 200.00		
71 (f)	Machine Repairs—Labor	50.00	
72	Timbering—Labor	2,400.00	
73	Ventilation—Labor	450.00	
74	Drainage—Labor	475.00	
75 (b)	Removal Slate and Waste—Labor	1,000.00	
75 (c)	Driving Entries—Labor	400.00	
76 (a)	Haulage—Animal Operation—Labor	1,000.00	
76 (b)	Haulage—Mechanical Operation—Labor	3,800.00	
76 (c)	Haulage Equipment—Maintenance—Labor	2,500.00	
77 (a)	Dumping and Loading—Labor	1,600.00	
77 (b)	Box Car Loading—Labor	200.00	
77 (c)	Screening and Preparation—Labor	500.00	
78 (a)	Generating Power—Labor	700.00	

* Commissions on Pay-Roll Deductions cover charges to outsiders for collection of items on the pay-roll in their favor. Should a charge be made to boarding house keepers, in lieu of rent for company buildings, based on a percentage of pay-roll board collections, such percentage would be credited to Camp Rentals and not to this account.

Citizens National Bank. The credit to this account is for time checks issued at the mine office drawn on a bank in the locality of the mine. The amount and number of each time check is posted to the pay-roll. All time checks must be signed and countersigned by the chief mine clerk and the mine superintendent.

78 (b)	Boiler Fuel—Labor	150.00	
78 (d)	Power Equipment—Maintenance—Labor	300.00	
79 (a)	General Inside Labor and Supplies—Labor	200.00	
79 (b)	General Outside Labor and Supplies—Labor	1,000.00	
80 (a)	Superintendence—Labor	3,000.00	
80 (b)	Engineering—Labor	350.00	
80 (c)	Mine Office—Labor	500.00	
80 (d)	Maintenance—Mine Structures—Labor	300.00	
80 (g)	Accidents and Casualties—Labor	100.00	
58 (a—2)	Camp Upkeep—Maintenance	1,785.00	
55 (c)	Sales—Retail at Mine—Delivery Expense	50.00	
203	Investment in Tenant Buildings and Camp	350.00	
	46 Tenant Dwellings... $350.00 Authority #250—Construction 2 5-room houses: Nos. 525 and 526.		
209	Materials	20.00	
	Handling Props		
212 (b)	Accounts Receivable—Mine Office	15.00	
212 (c)	Employees' Overdrafts	750.00	
	[Operating Revenues...... $340.00]		
64	Revenue from Smithing		140.00
65	Revenue from Heat, Light, and Power		200.00
55 (c)	Sales—Retail at Mine		400.00
58 (a—1)	Camp Rentals		1,000.00
58 (i)	Commissions on Pay-Roll Deductions*		10.00
209	Materials		1,800.00
	Powder and Fuse Tickets Sold		
212 (c)	Employees' Overdrafts		650.00
217 (b)	Citizens National Bank (Time Checks)*		2,000.00

* *Ibid.*

231 (a)	Pay-Roll..................		42,060.00
	First Half-Month...... $23,000.00		
	Second Half-Month..... 19,060.00		
	Distribution of pay-rolls for the month of January, 1921.		

Entry No. 6

209	Materials........................	200.00	
210	Freight on Materials..............	850.00	
212 (d)	Accounts Receivable—Miscellaneous Company Store	1,000.00	
231 (c)	Freight Payable..................	300.00	
217 (b)	Citizens National Bank......		2,350.00
	Distribution mine office check register,* January, 1921.		

Entry No. 7

209	Materials on Hand................	600.00	
210	Freight on Materials........		600.00
	Freight on Materials into Materials account, January, 1921, in accordance with material report, Form M2		

Entry No. 8

203	Investment in Tenant Buildings and Camp........................	400.00	
	46 Tenant Buildings.... $400.00		
	Authority #250—Construction 2 5-room houses: Nos. 525 and 526.		
58 (a—2)	Camp Upkeep....................	500.00	
	Maintenance		
	[Operating and Maintenance Expenses....... $7,855.00]		

* Memo columns—debit and credit—on this form show time checks issued in amount shown by pay-roll entry No. 5.

71 (a)	Pick Mining	12.50	
71 (b)	Machine Mining	7.50	
71 (d)	Company Coal	10.00	
71 (f)	Machine Repairs	75.00	
72	Timbering	1,350.00	
73	Ventilation	600.00	
74	Drainage	850.00	
75 (b)	Removal of Slate and Waste	150.00	
75 (c)	Driving Entries	200.00	
76 (a)	Haulage—Animal Operation	300.00	
76 (b)	Haulage—Mechanical Operation	125.00	
76 (c)	Haulage Equipment—Maintenance	2,670.00	
77 (a)	Dumping and Loading	225.00	
77 (b)	Box Car Loading	60.00	
77 (c)	Screening and Preparation	75.00	
78 (a)	Generating Power	85.00	
78 (d)	Power—Equipment Maintenance	525.00	
79 (a)	General Inside Labor and Supplies	300.00	
79 (b)	General Outside Labor and Supplies	90.00	
80 (d)	Maintenance of Structures	120.00	
80 (g)	Accidents and Casualties	25.00	
209	Materials on Hand		8,755.00
	Distribution materials consumed in company use, January, 1921. See material Form M3 and material tickets in file.		

Entry No. 9

217 (b)	Citizens National Bank	1,600.00	
217 (g)	Cash on Hand—Mine Office	30.00	
55 (c)	Coal Sales—Retail at Mine		14.00
209	Materials on Hand		35.00
210	Freight on Materials (Refund Overcharge)		25.00
212 (b)	Accounts Receivable—Mine Office		1,500.00
212 (c)	Employees' Overdrafts		40.00

241 (b)	Reserve for Uncollectible Accounts....................		16.00
	Distribution mine office cash receipt book, January, 1921.		
	Entry No. 10		
212 (b)	Accounts Receivable Mine Office....	985.00	
	Accounts Receivable—Mine Office........... $1,000.00		
	Less: Pay-Roll Charges 15.00		
55 (c)	Coal Sales—Retail at Mine...		100.00
58 (a—1)	Camp Rentals..............		500.00
58 (a—2)	Camp Upkeep..............		35.00
	Maintenance		
65	Heat, Light and Power......		50.00
	Operating Revenues		
209	Materials on Hand..........		300.00
	Distribution mine office accounts receivable register, January, 1921.		
	Entry No. 11*		
	[Fixed Charges........... $773.90]		
81	Depletion........................	661.20	
82	Development Amortized..........	112.70	
239	Reserve for Depletion.......		661.20
240 (a)	Accrued Depreciation—Development..................		112.70
	Accrued depreciation—development and depletion reserve for January, 1921:		
	22,040 tons own production at .03 for depletion......... $661.20		
	22,540 tons total production at .005 for depreciation development... 112.70		

* Note that depletion is not computed on that portion of coal mined from leased land adjoining the property owned in fee. It is assumed, however, that such coal is reached through openings and development on the lands owned.

Entry No. 12

	[Fixed Charges.......... $1,577.80]		
83 (a)	Depreciation of Structures.........	394.45	
83 (b)	Depreciation of Equipment.........	1,183.35	
240 (b)	Accrued Depreciation—Structures....................		394.45
240 (c)	Accrued Depreciation—Equipment....................		1,183.35
	Depreciation mine structures and equipment for January, 1921, at estimated rate per ton for year, .07. (See schedule of depreciation on file.) Depreciation distributed to Structures and Equipment in ratio of the investments.		

Entry No. 13

63	Debit or Credit from Explosives, etc.. Operating Revenues	100.00	
209	Materials on hand..........		100.00
	Loss from powder and fuse sold miners during January, 1921. (See material report M 1.)		

Entry No. 14*

80 (i)	Insurance—General (Supplies)...... Operating and Maintenance Expenses	75.00	
58 (a—2)	Camp Upkeep.................... Fire Insurance	50.00	
218 (c)	Insurance Premiums Paid in Advance.................		125.00
	Fire insurance premiums applicable to expenses for January, 1921. (See insurance premium expiration register.)		

* It is assumed here that insurance premiums when paid are charged to the deferred account and spread over the life of the policies by monthly journal entries, from which the proper proportionate amounts are credited to the deferred account and charged to expenses.

Entry No. 15

96	Taxes............................	400.00	
	General Expenses and Administration		
58 (a—2)	Camp Upkeep....................	100.00	
	Taxes		
232 (a)	Accrued Taxes..............		500.00
	Estimated county and state property taxes for January, 1921.		

Entry No. 16

58 (a—2)	Camp Upkeep....................	283.33	
	Depreciation		
240 (d)	Accrued Depreciation—Camp		283.33
	Depreciation of camp investment as of January 1, 1921, on basis of 25-year life. 1/12 of 4% of $85,000.		

Entry No. 17

78 (b)	Boiler Fuel (Supplies)............	900.00	
	Operating and Maintenance Expense		
55 (a)	Coal Sales—Coal Produced..		900.00
	600 tons slack coal sent to boiler house, January, 1921. (See coal production report.) 600 tons at market slack price of $1.50 per ton.		

Entry No. 18

213 (b)	Accrued Interest Receivable........	120.00	
58 (g—3)	Interest on Funds and Securities Owned.............		120.00
	Accrued interest on notes receivable, as follows:		
	Trade:		
	John Ward & Co.: $2,000 at 6%—1 mo. .$ 10		

W. Benton C. & W. Co.: $4,000 at 6%—½ mo.	$ 10
Campaign Coal Co.: $1,000—Without interest (paid January 10).	
Total on Trade Notes	$ 20
Special:	
W. B. Cokell: $20,000 at 6%—1 month...	100
Total Interest Accrued	$120

Entry No. 19

213 (a)	Profits Due from Collateral Operations	40.00	
58 (c)	Farming Operations	500.00	
58 (b)	Mercantile Operations		540.00
	Estimated profit or loss from collateral operations, January, 1921:		
	Farm—Loss.... $500.00		
	Mercantile Operations—Profit.. 540.00		

Entry No. 20*

95	Uncollectible Accounts	250.00	
	General Expenses and Administration		
241 (b)	Reserve for Uncollectible Accounts		250.00
	Reserve for uncollectible accounts charged to expenses, January, 1921.		

* The reserve for bad accounts is here understood to cover losses not only on sales customers' accounts but also on all other accounts receivable, including Employees Overdrafts. Some coal companies lose considerable sums on unpaid overdrafts of so-called "transient employees." No rule of estimate is here prescribed because it is not possible to do so. The conditions in each case will suggest a reasonable method of estimating this loss.

Entry No. 21

	[Selling Expenses......... $860.00]		
87	Salesmen's Salaries and Expenses....	260.00	
88	Officers' Salaries and Expenses......	400.00	
89	Office Salaries and Expenses........	200.00	
	[General Expenses and Administration......... $2,765.00]		
91	Officers' Salaries and Expenses......	1,250.00	
92	Office Salaries....................	1,015.00	
94	Legal Expense....................	500.00	
231 (a)	Pay-Roll..................		3,625.00
	Distribution general office pay-roll, January, 1921.		

Entry No. 22

59 (a)	Interest on Long-Term Debt.......	300.00	
232 (b)	Accrued Interest Payable....		300.00
	Interest accrued on mortgage notes, January, 1921. $60,000—1 mo. at 6%.		

Entry No. 23

59 (b)	Federal Income and Profits Taxes....	870.77	
241 (c)	Reserve for Federal Income and Profits Taxes.........		870.77
	Estimated federal income and profits taxes applicable to earnings of January, 1921.		

3. The trial balance of the general ledger, as of January 31, 1921, is as follows:

TRIAL BALANCE, JANUARY 31, 1921

Account Number	*Title*	*Debit*	*Credit*
201 (a)	Coal Lands....................	$180,000.00	
202	Investment in Mine Plant and Equipment..................	225,000.00	
203	Investment in Tenant Buildings and Camp..................	85,750.00	

204	Investment in Mercantile Operations	35,000.00	
205	Investment in Farms	25,000.00	
209	Materials on Hand	29,830.00	
210	Freight on Materials	225.00	
211 (b)	Coal in Transit	250.00	
212 (a)	Accounts Receivable—Sales Office	100,353.80	
212 (b)	Accounts Receivable—Mine Office	2,000.00	
212 (c)	Employees Overdrafts	1,560.00	
212 (d)	Accounts Receivable—Miscellaneous	2,435.00	
213 (a)	Accrued Profits Due from Collateral Operations	3,540.00	
213 (b)	Accrued Interest Receivable	1,210.00	
214 (a)	Notes Receivable—Trade	2,000.00	
214 (b)	Notes Receivable—Special	20,000.00	
217 (a)	First National Bank	55,730.00	
217 (b)	Citizens National Bank	2,250.00	
217 (f)	Cash Working Funds—General Office	125.00	
217 (g)	Cash on Hand—Mine Office	130.00	
217 (h)	Cash on Hand—General Office	545.00	
218 (a)	Organization Expenses	2,000.00	
218 (c)	Insurance Premiums—Paid in Advance	995.00	
218 (b)	Royalty Advances	50.00	
230 (b)	Mortgage Notes		60,000.00
231 (a)	Pay-Roll		22,685.00
231 (b)	Unclaimed Wages		350.00
231 (c)	Freight Payable		100.00
231 (d)	Vouchers		63,540.00
232 (a)	Accrued Taxes		2,500.00
232 (b)	Accrued Interest Payable		900.00
239	Reserve for Depletion		11,311.20
240 (a)	Accrued Depreciation—Development		1,287.70
240 (b)	Accrued Depreciation—Structures		4,394.45
240 (c)	Accrued Depreciation — Equipment		9,683.35
240 (d)	Accrued Depreciation—Camp		3,583.33
241 (b)	Reserve for Uncollectible Accounts		4,266.00

241 (c)	Reserve for Federal Income and Profits Taxes		40,870.77
241 (d)	Reserve for Contingencies		3,000.00
242	Capital Stock		500,000.00
245	Undivided Profits		37,670.00
	Operating and Maintenance Expenses	58,870.00	
	Operating Revenues		290.00
	Fixed Charges	2,401.70	
	Selling Expenses	3,100.00	
	General Expenses and Administration	4,315.00	
55 (a)	Sales—Coal Produced		80,103.80
55 (c)	Sales—Retail at Mine		464.00
58 (a—1)	Camp Rentals		1,500.00
58 (a—2)	Camp Upkeep	3,108.33	
58 (b)	Mercantile Operations—Net		540.00
58 (c)	Farming Operations—Net	500.00	
58 (g—1)	Purchase Discounts		150.00
58 (g—3)	Interest on Funds and Securities Owned		200.00
58 (i)	Commissions on Pay-Roll Deductions		10.00
58 (j)	Miscellaneous Income		45.00
59 (a)	Interest on Long-Term Debt	300.00	
59 (b)	Federal Income and Profits Taxes	870.77	
	Totals	$849,444.60	$849,444.60

The student should study carefully the journal entries given above and trace their effect on the opening trial balance. One of his practice problems (see Appendix A, v) requires that he derive the trial balance of January 31 from that of December 31 and the journal entries which summarize the transactions for the month of January. He will note that the trial balance of January 31 is an "adjusted" trial balance from which, therefore, the regular monthly income and cost statements may be drawn up. These statements follow.

INCOME STATEMENT
January, 1921

	Month			Year to Date		
			Per ton			Per ton
Sales:						
From Purchased Coal (......Tons)...	None					
From Mined Coal (22,540 Tons) (See Sales Analysis)..................	$80,567.80					
Total Sales.......................		$80,567.80	$3.574		$80,567.80	$3.574
Cost of Coal Sold:						
Mining and Selling Costs (See Cost Statement).................	$68,396.70					
Coal Inventory—Dr. or Cr. (To Storage ......T., From Storage........T.)	None					
Coal Purchased (......Tons)........	None					
Total Cost Coal Sold.............		68,396.70	3.034		68,396.70	3.034
Profit from Coal Sold.............		$12,171.10	$ .540		$12,171.10	$ .540
Income Debits or *Credits*:*						
Dwellings and Camp...............	$ 1,608.33			$1,608.33		
Mercantile Operations..............	*540.00*			*540.00*		
Farming Operations................	500.00			500.00		
Interest on Funds and Securities Owned	*200.00*			*200.00*		
Purchase Discounts................	*150.00*			*150.00*		
Commissions on Pay-Roll Deductions.	*10.00*			*10.00*		
Miscellaneous.....................	*45.00*			*45.00*		
Total (Extended Net)............		1,163.33			1,163.33	
Total Income......................		$11,007.77			$11,007.77	
Deductions from Income:						
Interest on Long-Term Debt.........	$ 300.00			$ 300.00		
Income and Profits Taxes...........	870.77	1,170.77		870.77	1,170.77	
Net Income........................		$ 9,837.00			$ 9,837.00	

* Credits are shown in italics.

Income Statement—Analysis of Sales

January, 1921

Sales—From Production and Storage

Kind	Tons	Average Realization	Amount
Lump	4,500	$5.00	$22,500.00
Egg	3,275	5.00	16,375.00
Nut	2,838	4.77	13,567.80
Slack	4,672	1.50	7,008.00
Mine Run	200	3.50	700.00
Railroad	6,351	3.00	19,053.00
Coal Shipped	21,836	$3.627	$79,203.80
Mine Retail	104	3.50	464.00
Boiler Fuel	600	1.50	900.00
Total	22,540	$3.574	$80,567.80

This schedule, analysis of sales, presents the detail of the sales of mined coal as shown in the income statement for the month. The statistics of "average realization" are secured by dividing the sales income shown in the Amount column by the corresponding item in the Tons column. To the "Coal Shipped" are added the coal sold retail at the mine and that sent for consumption in the power plant. It will be noted that, in accordance with the position advocated by the writer, this fuel is charged into costs at a fair retail price, here $1.50, and, of course, treated as a part of sales income.

Cost Statement—Mining and Selling Costs

January, 1921

	Labor			Supplies		
		Per Ton			Per Ton	
	Amount	Total Production	Affected Production	Amount	Total Production	Affected Production
Operating and Maintenance Expense:						
Mining:						
Pick Mining	$20,000.00	$ .888	$1.00	$ 22.50	$.001	$.001
Machine Mining	2,115.00	.094	.90	22.50	.001	.010
Machine Repairs	50.00	.002	.02	75.00	.003	.032
Other Mining	500.00	.022				
Company Coal	75.00	.003	.50	10.00	.001	.067
Narrow Work—Pick Mining	1,400.00	.062	.07			
Narrow Work—Machine Mining	200.00	.009	.085			
Total	$24,340.00	$1.080		$ 130.00	$.006	
Timbering	$ 2,400.00	$ .106		$ 1,350.00	$.060	
Ventilation	450.00	.020		600.00	.027	
Drainage	475.00	.021		850.00	.038	
Dead Work:						
Removal of Slate and Waste	$ 1,000.00	$ .044		$ 150.00	$.007	
Driving Entries	400.00	.018		200.00	.009	
Total	$ 1,400.00	$ .062		$ 350.00	$.016	
Haulage:						
Animal Operation	$ 1,000.00	$ .044		$ 300.00	$.013	
Mechanical Operation	3,800.00	.169		125.00	.006	
Equipment Maintenance	2,500.00	.111		4,500.00	.200	
Total	$ 7,300.00	$ .324		$ 4,925.00	$.219	
Tipple:						
Dumping and Loading	$ 1,600.00	$ .071		$ 225.00	$.010	
Box Car Loading	200.00	.009		60.00	.003	
Screening and Preparation	500.00	.022		75.00	.003	
Total	$ 2,300.00	$ .102		$ 360.00	$.016	

(Statement continued on following page.)

Cost Statement—Mining and Selling Costs—*Continued*

January, 1921

	Labor			Supplies		
		Per Ton			Per Ton	
	Amount	Total Production	Affected Production	Amount	Total Production	Affected Production
Power:						
Generating Power	$ 700,00	$ .031		$ 85.00	$.004	
Boiler Fuel	150.00	.007		900.00	.040	
Water						
Equipment Repairs	300.00	.013		525.00	.023	
Purchased Power						
Total	$ 1,150.00	$ .051		$ 1,510.00	$.067	
General Inside	$ 200.00	$ .009		$ 300.00	$.013	
General Outside	1,000.00	.044		90.00	.004	
Mine Overhead:						
Superintendence	$ 3,000.00	$ .133		$ 50.00	$.002	
Engineering	350.00	.016		40.00	.002	
Mine Office	500.00	.022		100.00	.004	
Maintenance—Mine Structures	300.00	.013		120.00	.005	
Mine Automobile						
Welfare Work				350.00	.016	
Accidents and Casualties	100.00	.005		25.00	.001	
Compensation Insurance				1,880.00	.083	
Insurance—General				75.00	.003	
Miscellaneous				500.00	.022	
Total	$ 4,250.00	$ .189		$ 3,140.00	$.138	
Total Gross Operating and Maintenance Expense	$45,265.00	$2.008		$13,605.00	$.604	

	Month			Year to Date		
	Amount	Per Ton		Amount	Per Ton	
		Total Production	Affected Production		Total Production	Affected Production
Total Gross Operating and Maintenance Expense; Labor and Supplies	$58,870.00	$2.612		$58,870.00	$2.612	
Operating Revenues Debits and *Credits**:						
Powder and Fuse Sold	100.00	.004		$100.00	$ .004	
Smithing	*140.00*	*.006*		*140.00*	*.006*	
Heat, Light and Power	*250.00*	*.011*		*250.00*	*.011*	
Total—Net	*$290.00*	*$.013*		*$290.00*	*$.013*	
Total Net Operating and Maintenance Expense	$58,580.00	$2.599		$58,580.00	$2.599	
Fixed Charges:						
Depletion	$ 661.20	$ .029	$ .03	$ 661.20	$ .029	$ .03
Development—Amortized	112.70	.005		112.70	.005	
Depreciation	1,577.80	.070		1,577.80	.070	
Royalty—Current	50.00	.002	.10	50.00	.002	.10
Total	$ 2,401.70	$ .106		$ 2,401.70	$ .106	
General Expenses and Administration:						
Officers' Salaries and Expenses	$ 1,500.00	$ .067		$ 1,500.00	$ .067	
Office Salaries	1,015.00	.045		1,015.00	.045	
Office Expenses	500.00	.022		500.00	.022	
Legal Expenses	600.00	.027		600.00	.027	
Uncollectible Accounts	250.00	.011		250.00	.011	
Taxes	400.00	.018		400.00	.018	
Miscellaneous	50.00	.002		50.00	.002	
Total	$ 4,315.00	$ .192		$ 4,315.00	$ .192	

(Statement continued on following page.)

Cost Statement—Mining and Selling Costs (*Continued*)

January, 1921

	Month			Year to Date		
		Per Ton			Per Ton	
	Amount	Total Production	Affected Production	Amount	Total Production	Affected Production
Total Mining Costs	$65,296.70	$2.897		$65,296.70	$2.897	
Selling Costs:			(Per Ton Shipped)			(Per Ton Shipped)
Commissions	$ 1,000.00	$ .044	$.046	$ 1,000.00	$ .044	$.046
Advertising	850.00	.037	.039	850.00	.037	.039
Salesmen's Salaries and Expenses	400.00	.018	.018	400.00	.018	.018
Officers' Salaries and Expenses	400.00	.018	.018	400.00	.018	.018
Office Salaries and Expenses	350.00	.016	.016	350.00	.016	.016
Miscellaneous	100.00	.004	.005	100.00	.004	.005
Total	$ 3,100.00	$ .137	$.142	$ 3,100.00	$ .137	$.142
Total Mining and Selling Costs	$68,396.70	$3.034		$68,396.70	$3.034	

* Credits are shown in italics.

Cost Statement—Production Statistics

January, 1921

Production	Tons Month	Tons Year to Date	Production Accounted For	Tons Month	Tons Year to Date
From Pick Mining	20,000	20,000	Shipments	21,836	21,836
From Machine Mining	2,350	2,350	Boiler Coal	600	600
From Company Coal	150	150	Mine Retail Sales	104	104
			Adjustments	None	None
	22,500	22,500	Total Production	22,540	22,540
Plus or minus difference between coal in chutes and partly loaded cars first and last of month—Plus	40	40			
Production to be accounted for	22,540	22,540	Royalty Coal in total production	500	500

CHAPTER VI

PRECIOUS METAL MINE ACCOUNTING

By Reginald Thomas

General Considerations

Ore mining is a speculative business in which investors risk their money with the hope of a greater return than can be obtained from less hazardous enterprises. Until all veins within the mine limits have been developed it is impossible to determine accurately the profitableness of a piece of mining property. Metal mining profits obviously depend upon the difference between the cost of mining and smelting the ore and the market price of the metals extracted therefrom. Since costs of production vary greatly, it is of vital importance at the inception of operations to install an accounting system adequate for the two main purposes of ore mining accounting, namely: (1) to distinguish accurately between expenditures chargeable to mine development and those chargeable to ore production, and (2) to allocate expenditures to the departments of work in which they were incurred.

Mining companies operate in two main classes: (1) those which own their mine property outright in fee simple or ready for United States Patent, and (2) those working the mine under a "lease and option." The status of the first class is well understood. The second class embraces those which have only a limited right to the property by reason of holding a lease and option to purchase. The company has full possession of and the right to operate the property during the lease period, for which it usually pays to the owner a royalty based on the return from each shipment of ore sold, these royalties often being applicable

to the specified purchase price when, and if, the option to purchase is exercised.

Every mining property has its own peculiar engineering and development problems, but withal there are certain fundamental features common to all properties. Therefore the outline of the accounting system and the explanatory matter here given are to be considered as suggestive of a plan which must be modified to suit the requirements of each particular property. The essential thing is so to departmentize the work and distribute expenditures for labor, supplies, and overhead that a detailed report may be readily prepared from the records to show the results of operations. The accounting methods to be here discussed are those suitable for an ore mine of moderate size. It usually happens that the more precious metals are found in combination in the same ore, with one or the other in a preponderant amount. Ores also often change in character and value, especially as the veins are developed in depth. Therefore the subject heading of this chapter refers to precious metal mining in general rather than specifically to gold, silver, lead, or tin mining.

Nature of Mining Operations

In order to draw the line of demarcation between capital and revenue expenditures, that is, between mine purchase and development and ore production, some general idea of the physical characteristics of the mine is required. Experience has shown that it is usually best for the accountant to visit the mine in person and familiarize himself with the surface and underground workings in company with the mine superintendent or foreman, so as to obtain at least a general idea of the nature of the work, the objects in view, and the methods required to accomplish them.

Ore mining may be regarded as a continuous process producing one commodity of various grades, the quality of which cannot be determined until after the completion of production. Therefore, for the purpose of managerial control the most practical

plan is to segregate the various operations in the accounts so that the management may distinguish between development and ore-breaking charges in connection with the production of a given quantity of ore.

Experience has proved that for accounting purposes it is best to classify mining expenditures as to kind rather than as to place. "Mine development," for instance, includes such operations as sinking the shaft, drifting, i.e., making horizontal excavations, sinking winzes, i.e., exploratory shafts, and doing other technical development work in a great number of places. Likewise ore-breaking includes stoping, i.e., cutting ore from overhead or on the floor of the gallery, drilling and blasting, timbering, etc., wherever they occur.

If it is desired to know from what part of the mine the ore is derived and the cost of its production, this information may be obtained by the use of card records to collect the expenditures for labor and supplies at each place of work. In conjunction with such records it would also be necessary to keep separate tallies of the ore production of the different mine shafts, of the estimated average gross assay values, etc. Since ore is usually drawn from a number of places to make up car-lot shipments for the smelters, which settle for each car as a separate unit, the separation of the different lots of ore would have to be maintained up to the point of shipment. It will be readily seen that the segregation of expenditures by place is not so desirable as the proper allocation of all charges incurred in producing a given quantity of ore, unless it is essential to compare the yield of ores extracted from different parts of the mine. Such comparisons, however, can usually be made more conveniently by means of the supplementary card records referred to above. These are, of course, not strictly accurate.

Selling the Ores

The higher grades of crude ore are usually shipped and sold to a smelting concern equipped to handle the output of several

mines. The lower grades of crude ores, which when broken contain a considerable portion of rock, are sold to "custom concentrating" mills, unless mining operations are on a scale big enough to warrant the mining company itself investing in a reduction and breaking plant. Such a plant extracts the principal ore values by crushing and concentrating the powdered rock, and these concentrates are then shipped to the smelters like the higher grades of crude ore.

As has been stated before, ores vary greatly in character. It sometimes happens that an ore is free-milling, so that it can be crushed and the values extracted by amalgamation, i.e., by passing the crushed ore over tables covered with quicksilver, which attracts the precious metals. The quicksilver is then scraped off and placed in a retort, and since this metal quickly volatilizes at a relatively low temperature, the precious metals are in this way extracted and made into bars or ingots ready for sale. As a rule, however, few ores are sufficiently pure and rich to be treated in this way and the precious metals must be extracted by smelting. In the process of smelting it is impossible to recover all the metal from the ore, causing losses which vary considerably with ores of different character.

An ore can seldom be smelted without first combining it with other ores of different composition containing the fluxes required for the process of smelting. Therefore smelters usually have a sliding scale for treatment charges, which must be determined before the value of a given ore shipment can be ascertained. In selling crude ores to the smelter the basis used for estimating the value of the ore is the price of the refined metal at a financial center, such as New York or London. Penalties are imposed for the presence of undesirable elements in the ore, since crude values extracted by the smelter must go through additional refining processes before they reach the market as pure metal. To arrive at the net value of the ore, the procedure is to assay a fair average sample of each car-lot. Because of this practice, so far as possible, ores are graded and shipped separately. Smelter

charges for treatment are based upon the dry weight and the value per ton of the ore. As there is always a certain percentage of moisture present, the smelter first weighs and samples the shipment, then dries the sample, and in this way estimates the percentage of moisture present. The result is taken as indicative of the moisture percentage in the entire car-lot. After the ore has been treated, the smelter makes up a statement, called the "settlement sheet," showing the results of the smelting process, deducts the charges—including freight charges, as noted below—from the value of the invoiced ore, and sends a check to the shipper for the balance due.

To insure equitable treatment and a fair settlement, mining companies usually engage the services of a professional "shipper's agent," who meets the car at the smelter and checks the weights, the assays, and deductions claimed by the smelter. Should his findings show any discrepancies with those submitted on the smelter's settlement sheet, the work is repeated by both parties. In the event of a continued disagreement, it is customary to call in an umpire of unquestioned integrity whose decision is usually accepted as final.

Freight rates on ore shipped vary greatly in different districts. They are usually based on the gross value of the ore, as determined at the smelter, and the distance it was hauled, upon the assumption that the railroad takes greater risks when hauling ores of higher values. Freight charges are never prepaid, because the railroad awaits the result of the smelter's settlement and accepts the value per ton shown therein as the basis for its freight rate. The smelter withholds the freight charge at the time of the settlement and pays it directly to the railroad.

Office Organization

Although a mining enterprise sometimes undertakes the construction and operation of crushing mills and smelters, and possibly of a short railroad or tramway and a general merchandise store, for the sake of simplicity the discussion is here confined to

the accounting for mining operations only. As mines are usually located in mountainous districts more or less remote from civilization, the general office and the headquarters of the management are often located at the nearest business center. At the general office are kept the following books of account and records: general cash book, general voucher register, general journal, detail ledger and general ledger, stock certificate books, stock transfer records, stock ledgers, minute books, etc. The general ledger, in conformity with accounting practice, contains the controlling accounts, the details of which are in the subsidiary ledgers.

The mine office is in charge of the mine superintendent who is usually a technical man with some business experience, for among his duties are the selection of heads for the various departments of work, the local purchase of supplies currently used, responsibility for operating costs and production, and such local business arrangements as are not of sufficient importance to be referred to the general office for decision. He sends to the general office each month reports covering the month's operations, from which summary totals are prepared for posting to the general ledger. At the mine office are kept the local cash book, local voucher register, local journal, local detail ledger, and local general ledger, beside assay records, ore shipment records, engineering data, etc. The mine office in its local general ledger uses control accounts, but these differ from those at the general office in that the general office control accounts may embrace two or more of the control accounts carried in the mine office ledger.

Account Classification

The account classification which follows shows the detail ledger accounts embraced by the general ledger control accounts, arranged in convenient form for the preparation of a trial balance. The consecutive numbering of the general ledger accounts, with the use of the same key number to designate the subsidiary accounts controlled by the general ledger account, is of great advantage as a time-saver and as a means of insuring the correct

classification of expenditures. The study of the following pages will show that similar account numbers are used for accounts common to both the general office and mine office ledgers.

Ledger Accounts for the General Office

Account Number	*Account Title*
1	Mining Property
2	Plant and Equipment
3	Construction in Progress
4	Materials and Supplies
5	Mined Ore on Hand
6	Investment Securities
7	Bills Receivable
8	Accounts Receivable
9	Deferred Charges
10	Suspense
11	Mine Office
12	Banks
13	Cash
14	Working Capital Liability
15	Bonds Payable
16	Bills Payable
17	Accounts Payable
18	Dividends Payable
19	Pay Checks
20	Vouchers Payable
21	Unsubscribed Capital Stock, par
22	Capital Stock, par
23	Treasury Stock, par
24	Bonds in Treasury, par
25	Surplus from Donated Stock
26	Surplus Earned
27	Reserves
27- 1	Reserve for Depletion of Mine
27- 2	Reserve for Depreciation of Plant and Equipment
28	Profit and Loss
29	Operating Expenses
29- 1	Mine Development
29- 2	Ore-Breaking

29– 3 Transportation, Mine to Railroad
29– 4 Shipping and Selling
29– 5 Miscellaneous Maintenance and Repairs
29– 6 General Mine Overhead Expenses
29– 7 Organization Expenses
29– 8 General Office Administrative Salaries
29– 9 General Office Clerical Expenses
29–10 General Office Supplies and Expenses
29–11 General Office Stationery and Printing
29–12 Employers' Liability Insurance Premiums
29–13 Fire Insurance Premiums
29–14 Legal Expenses
29–15 Property Taxes
29–16 Income Taxes
29–17 Bad Debts
29–18 Interest Allowed

30 Income
30– 1 Ore Production, gross
30– 2 Rentals
30– 3 Interest Earned
30– 4 Miscellaneous Income

Ledger Accounts for the Mine Office

Account Number	*Account Title*
2	Plant and Equipment
	2–1 Power Plant
	2–2 Blacksmith Shop
3	Construction in Progress
4	Materials and Supplies
5	Mined Ore on Hand
7	Bills Receivable
8	Accounts Receivable
11	General Office
12	Banks
13	Cash
16	Bills Payable
19	Pay Checks
20	Vouchers Payable

27 Reserves
- 27–1 Reserve for Depletion of Mine
- 27–2 Reserve for Depreciation of Plant and Equipment
- 27–3 Reserve for Depreciation of Dwellings

28 Profit and Loss

29–1 Mine Development
- 29–1 (a) Diamond Drilling
- 29–1 (b) Drilling and Blasting
- 29–1 (c) Filling
- 29–1 (d) Timbering
- 29–1 (e) Mucking and Tramming
- 29–1 (f) Pipe and Track Work
- 29–1 (g) Assaying
- 29–1 (h) Engineering and Surveying
- 29–1 (i) Blacksmithing
- 29–1 (j) Pumping
- 29–1 (k) Hoisting
- 29–1 (l) Power
- 29–1 (m) Depreciation of Plant and Equipment

29–2 Ore-Breaking
- 29–2 (a) Drilling and Blasting
- 29–2 (b) Handling in Stopes
- 29–2 (c) Filling
- 29–2 (d) Timbering
- 29–2 (e) Mucking and Tramming
- 29–2 (f) Pipe and Track Work
- 29–2 (g) Assaying
- 29–2 (h) Engineering and Surveying
- 29–2 (i) Blacksmithing
- 29–2 (j) Pumping
- 29–2 (k) Hoisting
- 29–2 (l) Power
- 29–2 (m) Depreciation of Plant and Equipment

29–5 Miscellaneous, Maintenance and Repairs
- 29–5 (a) Office Building
- 29–5 (b) Miners' Mess House
- 29–5 (c) Miscellaneous Buildings
- 29–5 (d) Roads and Trails

29–6 General Mine Overhead Expenses
- 29–6 (a) Salaries
- 29–6 (b) Clerical Help

29–6 (c) Office Expenses and Supplies
29–6 (d) Telegrams, Postage and Telephone
29–6 (e) Extraordinary Expenses
29–6 (f) Depreciation of Plant and Equipment
29–6 (g) Depletion of Mine
29–x Power Plant Operations (clearing account)
29–x Blacksmith Shop Operations (clearing account)
29–x Pumping (clearing account)
29–x Hoisting (clearing account)
30 Income
30–1 Ore Production, gross
30–2 Rentals
30–3 Interest Earned
30–4 Miscellaneous Income
31 Pay-Roll (clearing account)

The advantages of the above classification are apparent. By the operation of general ledger control accounts, all details of income and expense are carried in the subsidiary ledgers and only a brief examination of the general ledger accounts is necessary to show at the end of the month how income compares with expenses.

Operation of Control Accounts in General

The operation of the foregoing controlling accounts is governed by well-known accounting principles, the detail ledgers being used for recording the daily transactions which at the end of the month are posted in total to the general ledger from the subsidiary books. Further analysis, as is often necessary for special purposes, is facilitated by the use of the space provided in the detail ledger accounts to show the details of the entry, voucher number (if any), and brief particulars.

Some Specific Control Accounts

The form of some of the detail accounts and their relation to the controlling accounts need brief explanation.

Construction in Progress (3) is a control account temporarily maintained to indicate the amount of any unfinished construc-

tion in progress. As soon as any part thereof is completed, a journal entry is made transferring the item to Plant and Equipment or other suitable asset account.

The inventories are represented by the three control accounts:

2 Plant and Equipment
4 Materials and Supplies
5 Mined Ore on Hand

So far as possible, the inventory items should be listed all in one day. Notice should be given in advance and due preparation made so that this can be done with the least possible interruption of the current work. The ordinarily recognized principles for valuing the inventories of plant and equipment and materials and supplies govern here as in other lines of business.

Valuing Ore Mined

Mined Ore on Hand should be estimated carefully as to tonnage and its valuation should be only the estimated cost per ton to mine the ore and deliver it to the place where stored. To value this ore at its assay value would be to ignore the fact that the gross value of all the ore in the mine has been taken into consideration in the original capitalization of the mine. Therefore the valuation to be accurate and conservative should be restricted to the amount expended as stated above.

The valuation of ore in transit, however, is another matter. Such ore presumably has been sold to the smelters, which will pay for the gross values agreed upon less freight and treatment charges. Therefore it is customary to value ore in transit as an account receivable subject to later adjustment when the smelting and other charges are known.

When ore is shipped to the smelter, two methods of handling the transaction are used. Under the one, the transaction is held on memorandum until the smelter settlement sheet is received on the basis of which cash (or the smelter) is charged and the proper income account, Ore Production (or Ore Sales), is credited.

Under the other method, when the ore is shipped the smelter is charged on the basis of the company's own assay, and Suspense or Ore in Transit Suspense is credited, these being somewhat in the nature of memorandum accounts. Upon receipt of the settlement sheet, this entry is reversed and the entry indicated under the first method is made.

It should be noted that mining companies make it a rule to keep some mined ore stored in the mine stopes either as a reserve for stabilizing the amount of ore sold or for the purpose of holding it for a higher price on a rising market.

Depletion and Depreciation

A mine by the very nature of its operations is a wasting asset and the payment of returns to the stockholders necessarily involves a reduction of the capital assets. The investor in the stock of a mining company knowingly assumes more than the ordinary business risks, because he expects larger returns if the mine produces to the extent of expectations.

Every ton of ore removed from a mine depletes the available supply and reduces the value of the original deposit. In recognition of this fact a well-managed mining company includes in its operating expenses a fixed charge per ton for depletion, the amount being estimated, because it is impossible to ascertain exactly the tonnage of ore the mine will produce. This charge constitutes a sinking fund provision which is credited to Reserve for Depletion of Mine. Where a reserve for depletion has been established and the funds in the company treasury permit, capital dividends may be declared on the basis of this reserve, in addition to the dividends based on the profits from net earnings and declared out of surplus. However, this segregation of dividends as between a return of capital and a distribution of profits is not always attempted.

It is claimed by some that it is impracticable for mining companies to establish this depletion charge because during the early stages of the development of the mine the stock may be worth

intrinsically but a small fraction of its par value, and that likewise, when the payment of large dividends is assured, the same stock may be worth far more than its par value. In this connection, the relation of the depletion charge to the value of the stock is not important because the company, as such, can only deal with the redemption of its capital based upon the par value of the stock.

The depreciation of plant and equipment is for the most part more rapid in mining than in other industries. Machine drills, for instance, sustain a high amount of depreciation, and also the sundry small tools, ore cars, and buckets. Different rates of depreciation will usually apply to underground and surface equipment. The possibility of the complete depletion or abandonment of the mine before the expiration of the ordinary life of plant and equipment should be considered in connection with depreciation rates. In order to equalize per ton costs, depreciation is sometimes figured on a tonnage output basis, care being exercised to see that at the end of the year sufficient depreciation has been written off as estimated on the basis of the expected life of the equipment. To distribute properly the estimated annual depreciation as part of the operating expenses, the inventory of plant and equipment should be made up in groups and classified lists in such form as to make possible the preparation of tables of depreciation at approved rates. The total of the annual amount should be divided by 12 to find the amount per month to be included in operating expenses.

Classification of Expenditures

The following suggestions are given for the proper distribution of expenditures for labor and materials and supplies:

Account Number *Title*

29–1 Mine Development

To consist of labor, explosives, candles or oils or other lights, rails, drill steel, tools, picks, timbers, or other ma-

terials used in drifting, sinking, or driving for development purposes; to include proper apportionment of power, hauling out or in or hoisting of waste for development purposes.

29–2 Ore-Breaking

To include labor, explosives, candles, oils or other lights, tools, rails, drills, picks, or other materials or implements used directly in breaking ore or stoping it ready for shipment or storage; to include proper apportionment of power, hauling of ore, or hoisting same.

29–3 Transportation, Mine to Railroad

To include all expenses for labor or supplies incidental to removing the ore from the mine entrance to the railroad point for shipment and to cover wagon haulage, if any, or aerial tramway conveyance.

29–4 Shipping and Selling

To include railroad freight on ores, any switching charges in connection therewith, shipment assays, umpiring, and shippers' agent fees.

29–5 Miscellaneous Maintenance and Repairs

To include the expense of maintenance and upkeep of roads and trails, and general surface improvements.

29–6 General Mine Overhead Expenses

To include superintendent's salary, clerical help in mine office, office expenses, etc.

29–x Clearing Accounts

These include Power Plant Operations, Blacksmith Shop Operations, Pumping, and Hoisting, which are prorated over the other departments of work in proportions equitably estimated. The number of these clearing accounts depends upon the detail in which expenditures are classified and the extent of the company's operations.

Deferred Charges—Mine Development

In addition to the usual deferred charges of unexpired insurance premiums paid in advance, rentals in advance, etc., the

amortized portion of which is charged to operations monthly, an important item usually handled as a deferred charge in mine accounting is that of mine development. Such development represents temporarily unproductive work, usually of an exploratory nature, in which almost every ore mining company is necessarily engaged, whether upon a production basis or not. The sinking of a new shaft or the driving of a tunnel in quest of ore may be considered as a development for future productive operations just as much as the purchase of plant and equipment. Adequate provision must, of course, be made for gradually writing off these expenditures which should be amortized before the mine has been completely worked out. Mine Development account should never be used as a "dump" for the purpose of making the operating expenses appear lower than they are and thus inflating the assets of the company, and, certainly, stock commissions and similar items should never be buried here. In the event that a distinct development work happens to produce ore which is taken out and shipped, the value of the ore is not credited to Ore Production but to Mine Development.

Clearing Accounts

Certain general mine expenses are treated as indirect charges, i.e., common to all departments of operation. Included in these are:

1. Hoisting expense, where both ore and waste in a shaft are being constantly raised to the surface.
2. Pumping expense, where water is encountered in the mine and has to be removed to permit operations to continue, whether for mine development or ore-breaking.
3. Power plant operations, for supplying compressed air to the machine drills used on ore extraction or mine development, or for other purposes, such as blowing out powder smoke, etc.
4. Material department expense, including the wages of the stores and timekeepers, whose time is at the disposal of all classes of work.

These indirect charges are carried in clearing accounts from which they are prorated over the main operating accounts on an equitable basis. To dispose of the clearing accounts it is often necessary to make arbitrary apportionments over the kinds of work considered to have been benefited.

Distribution Sheets for Labor, Materials and Supplies

It is not desirable to fill the books of account with miscellaneous details which, if neatly tabulated in the original record, can be used as the original entry and filed conveniently for reference. Two current monthly work sheets, of a similar type, record the daily distribution of the labor expended and supplies used. The labor distribution sheet is illustrated in Form 1. The basis for the distribution is the foreman's report through the timekeeper as to how each man's time has been employed. Each day's labor distribution, if correctly made, will agree in total with the pay-roll entries for the same period. At the end of the month the footings of the sheet should be totaled and a journal entry prepared therefrom to charge the various accounts shown in the headings and to credit the total to Pay-Roll account, as follows:

Mine Development	$7,200.00	
Ore-Breaking	8,900.00	
Miscellaneous Maintenance and Repairs	750.00	
Pay-Roll		$16,850.00

The distribution of the materials and supplies used should include not only the invoice cost of the goods but also supplemental charges for railroad freight and hauling to the warehouse. The proportion of the railroad freight chargeable to each item can be ascertained from the freight bills. To apportion the heavy hauling charges fairly is less simple because the hauling is paid for by weight irrespective of the railroad classification, each load usually being a mixture of supplies of varying values. The best way to solve the difficulty is for the mine office to carry the freight and delivery charges in a Mine Supplies account, and to work out from experience, subject to correction, an estimated delivered

CONDENSED FORM OF DISTRIBUTION OF LABOR
A.B.C. MINING COMPANY

For Month of____________192____

Date	Place of Work	Mine Development (29-1)								Ore Breaking (29-2)								Miscellaneous, Maintenance and Repairs (29-5)				Clearing Accounts (29-X)			
		1a	1b	1c	1d	1e	1f	1g	1h	2a	2b	2c	2d	2e	2f	2g	2h	5a	5b	5c	5d	Power Plan	Black-smith Shop	Pump-ing	Hoist-ing
1																									
2																									
3																									
4																									
5																									
6																									
7																									
28																									
29																									
30																									
31																									
TOTALS																									

Form 1. Labor Distribution Sheet

cost price list under various classifications, this to be used in pricing the supplies issued. The operation of this account will bring about at the end of the year some difference between the aggregate of the physical inventory and the balance standing to the debit of Materials and Supplies in the general ledger. This difference can be adjusted by an adjusting journal entry between the Materials and Supplies account and the various operating accounts. It should be the aim of the mine office so to price the materials and supplies used as to make this periodic adjustment as small as possible, and to that end the cost price list should be subjected to constant revision.

The storekeeper, operating a complete stores system, should maintain a perpetual inventory in the form of a suitable card index classified into appropriate groups for ready reference, as shown in Form 2. From the work sheet, similar to Form 1, upon

PERPETUAL INVENTORY OF MATERIALS AND SUPPLIES
A.B.C. MINING COMPANY
No.____

Classification____ Article____

Unit____ Maximum to be on Hand____ Minimum to be on Hand____

From	Invoice Date	Quantity	Invoice Cost	Freight	Hauling	Total	Issued Date	Quantity	@	Amount	Balance	
											Quantity	Amount

Form 2. Perpetual Inventory for Materials and Supplies

which the daily issues of materials and supplies are distributed, a recapitulation is prepared from which a journal entry is made to debit the various accounts kept with the kind of work done and credit Materials and Supplies.

After the journal entries have been made from the two current distribution work sheets, the latter are filed in an envelope together with the signed requisitions, etc., relating thereto. The record of the detail figures is thereby confined to their original entry.

Statistical Records

Statistical records of various kinds should be kept at the mine office to facilitate the work of preparing reports for the company's use and for state and federal reports. These should include:

1. Property list
2. Equipment list
3. Insurance policy data
4. Current assays
5. Ore shipments

1. The property list should be tabulated in groups, showing names of claims, when and how acquired, and general remarks. Each building should be numbered and listed as to its location, purpose, brief description, cost, additions, etc.

2. Equipment should be listed under convenient heads, showing date acquired, location, cost, etc. These headings should be selected with a view to convenience of reference, as this list will be used when preparing tables of depreciation and placing fire insurance.

3. Insurance policies should be listed in order of dates, showing the names of the companies, policy numbers, amount, annual premiums, names and addresses of agents, and properties insured. Expirations should be noted in advance on the daily tickler.

4. The result of every assay made to test the ore contents in the mines should be recorded as to date, number, from where sample was taken, analysis, by whom made, etc. The original assay sheets should be filed in numerical order. Some companies have sufficient assay work to justify the employment of their own assayer in charge of a laboratory. In such cases the assay office becomes a department of work. Where no such laboratory is maintained, the work is done by outside assayers.

5. Ore shipments to the smelters should be numbered and recorded in permanent form to show date, to whom shipped, the smelter number, car number, assay values, prices used in settle-

ment, and other important facts. In some cases, the information includes the different metal contents in ounces or pounds of each ore shipment.

Other Books of Account

The voucher register contains all entries for accounts payable and shows the distribution thereof. The total of the credits to Vouchers Payable should be posted from the summary for the month to the control account in the general ledger. An alphabetical card index is maintained whereby the different voucher numbers assigned to each concern may be found.

Purchases should be handled and regulated as in any well organized business. All materials and supplies purchased, including equipment, should be considered as passed over to the care of the storekeeper, who is to be held responsible for same and made to report where and for what purpose he has allowed same to leave his possession. It is important that the storekeeper be instructed as to the difference between capital and revenue expenditures in order that he may check the distributions reported to him for supplies issued. Requisitions should be required in advance for all merchandise needed and the authorized purchase order forms used with standard follow-up methods. A description of this procedure is unnecessary.

The journal is employed for cross-entries and for its usual purposes, including adjusting and closing entries at the end of the fiscal period.

Miscellaneous Operations

Most mining companies have to provide accommodations for their employees, such as a mess house, bunk house, or clubroom. The last named is usually maintained entirely at the expense of the company, but the board and room accommodations are charged to the men at a fixed rate per day, which is deducted from their pay. Sometimes, the company rents buildings for these purposes to someone else to operate independently, collecting the

charges from pay-roll settlements and turning the total over to the operator at regular periods. The method of accounting for such operations calls for no comment.

It is not an uncommon thing for a mining company to lease out part of its property on a royalty basis. Such leases are often taken by local miners who believe they know where fresh ore is to be found. If successful in their search, they are amply rewarded for their efforts while the mining concern also benefits by their discovery. Any royalties so received are considered as miscellaneous earnings and not as ore production.

Cash Receipts and Disbursements

The smelter settlement checks are sent direct to the general office with the original settlement sheet. A duplicate statement is often forwarded to the mine office to enable it to prepare its operating cost and revenue statements. Upon receipt of these settlement checks the general office debits Cash and credits Mine Office for the amount, while the mine office debits General Office and credits Ore Production with the same figure.

As a general and desirable rule the cash receipts of the mine office are limited so far as possible to a monthly appropriation from the general office for operating expenses in accordance with a budget submitted in advance by the mine office. Sundry sales of materials and supplies may take place, but these are usually not extensive enough to call for any special accounting. Amounts due from employees for rentals, etc., are deducted upon the pay-roll and do not represent funds paid into the mine office. At the end of the month the mine office should prepare a report of cash receipts and disbursements which it sends to the general office together with a copy of the mine general ledger trial balance listing the total debits and credits of each account, not the net balances. This is necessary in order that the general office may prepare an abstract of the month's transactions at the mine office for record in the general office books. All control accounts, of course, should be reconciled with the detail ledgers.

Treatment of Special Items

Surplus from Donated Stock, not being an earned surplus, should be maintained as a separate account. The ordinary surplus account is intended to reflect the net earnings from mining operations. By making this distinction, the balance sheet shows the actual facts. Surplus from Donated Stock represents a book value only and is subject to reduction when any treasury stock is sold at less than its par value.

Any mining royalties paid by the mining company are a capital expenditure when applied to the purchase price of the mine, otherwise they should be included in operating expenses.

Interest on funds borrowed for construction purpose is a proper charge to construction in progress only during the period thereof.

When there is a sufficient credit to Reserve for Depletion of Mine, a capital dividend may be declared therefrom, provided, of course, there are funds in the treasury to permit this withdrawal. As such dividends represent the liquidation of capital they may be charged to the Capital Stock, par account, or carried in a suitable capital stock valuation account.

Closing the Books

At the end of the fiscal year the books are closed in the usual manner after the inventories have been taken and the necessary adjustments have been made. Due provision should be made for bad debts, if any seem probable, and for federal income and excess profits taxes due on the year's earnings by charging Taxes and crediting Reserve for Federal Taxes. When the taxes are paid in the ensuing year, they are charged to this reserve account. After the accounts have been closed and ruled off, the balance standing in the Profit and Loss account should be closed by journal entry into Surplus account.

Annual Reports

The annual reports should include the balance sheet, profit and loss statement, production report, mine footage report, to-

gether with a report of some kind from the board of directors. Two of these forms are given in outline below:

THE A B C MINING COMPANY
BALANCE SHEET
As at December 31, 19—

Assets

Fixed:		
Mining Property	$......	
Less—Reserve for Depletion	......	$......
Plant and Equipment	$......	
Less—Reserve for Depreciation	......	......
Construction in Progress	$......	......
Current:		
Materials and Supplies	......	
Mined Ore on Hand	......	
Investment Securities	......	
Bills Receivable	......	
Accounts Receivable	......	
Cash on Hand and in Banks	......	......
Deferred:		
Deferred Charges to Operations	$......	
Suspense	......	
Mine Development	......	......
Total Assets		$......

Liabilities

Fixed:		
Bonds Payable	$......	
Working Capital Liability	......	$......
Current:		
Bills Payable	$......	
Accounts Payable	......	
Dividends Payable	......	
Pay Checks	......	
Vouchers Payable	......	......
Total Liabilities		$......

Excess of Assets over Liabilities

Represented by:		
Capital Stock, par, authorized..................	$......	
Less—Treasury Stock, par..................	......	$......
Surplus from Donated Stock..................	$.....	
Surplus, earned 1/1/—........................	......	
Add—19— earnings........................	......	
Reserves....................................	......	......
Total Capital................................		$......

THE A B C MINING COMPANY

PROFIT AND LOSS STATEMENT

For the Year Ended December 31, 19—

			Average Per Ton
PRODUCTION:			
Tons Ore Production, gross...........	$......		
Less—Smelter Charges Deducted....	......		
Net Smelter Returns....................		$......	$......
EXPENSES:			
Labor and Supplies for:			
Mine Development................	$......		
Ore Breaking.....................	......		
Transportation, Mine to Railroad.....	$......		
Shipping and Selling.................	......		
Miscellaneous Maintenance and Repairs..........................	......		
General Mine Overhead Expense......	......		
Other Administrative and General Expenses........................	......	......	......
Net Operating Profit....................		$......	$......
Add—Miscellaneous Income................		......	......
Reserved for Federal Taxes....................		$......	$......
Net Profits to Balance Sheet.............		$......	$......

CHAPTER VII

RANCH COST ACCOUNTING

By Clem W. Collins

I. Accounting Organization and Records

Treatment from Accountant's Viewpoint

It has been the writer's observation that most of the articles and books on the subject of farm accounting are written in a more or less elementary manner, being intended primarily for the use of the farmer. Such treatment of the subject fills a real need, for accounting in connection with farming is greatly neglected and treatises written with a view to interesting the farmer and aiding him in starting and keeping even the elements of an accounting system are highly laudable.

There seems to be a real need, also, for such treatment of the subject as will aid those whose duty it is to design and supervise systems for agricultural enterprises. Only a complete analysis of the operations of the business from the viewpoint of the accountant will make clear the principles involved and enable the student to devise the necessary system for bringing out the most important facts. For this reason the subject is here treated from the viewpoint of the accountant.

Farming—A Manufacturing Process

Farming is essentially a manufacturing process and the finished product is whatever the farmer finally markets, such as grain, hay, beef, pork, mutton, vegetables, etc. The process is complicated by the fact that it is necessary to manufacture numerous products each of which in turn becomes a component part of another product. Grain is raised which is itself a finished prod-

uct; it is fed to horses creating there another finished product; the horses provide the power with which to raise hay, another finished product; the hay in turn is fed to cattle, producing a final finished product of beef. Each process has certain by-products each of which is or should be utilized.

As intimated, farming usually embraces at least two classes of operations, namely, agriculture and live stock raising. In addition improvement and development are carried on simultaneously with these activities and often continuously. Each of these operations may be divided and subdivided *ad libitum;* for example, agriculture may embrace the raising of several crops, such as grain, hay, vegetables, fruits, etc., each of which may include various kinds; and live stock may include horses, cattle, sheep, hogs, etc., each of which constitutes a separate line of production and requires separate accounting; while improvements and development may include the construction of houses, fences, irrigation canals, or clearing ground, breaking ground, seeding land, etc.

Problems in the Determination of Farm Costs

The valuation or appraisal of the "goods in process" is one of the principal problems in farm accounting. The cost of the "raw material" consumed up to a given point in the process of production is difficult to determine, since for instance the value of the grass consumed by a cow or calf cannot be accurately estimated; and even if this were possible the cost of the grass would not measure the increase in value, for the cow would consume more than the calf yet she would not increase in value; while the growth of the calf would represent a value far greater than the feed consumed. So it is plain that the problem of inventorying requires a method other than that of adding material and labor consumed and overhead expenses.

Other problems confronting the accountant are the equitable distribution of the cost of boarding men, the expense of keeping horses, and the distribution of the time of each. The problems

here are due partly to the fact that a part of these expenses is incurred in maintenance; that is, the horses are used and fed while doing work necessary to care for them, and the men are paid and boarded while doing work necessary to provide food and shelter for themselves.

Departmental Organization

The majority of farms are too small for departmentizing and even where they are large enough the operations are often so mutually dependent and interrelated that departmentization is impracticable, if not impossible; but there are many farms that are capable of departmental organization; therefore the ideal condition will be used as an example and the principles laid down may be applied to individual cases so far as practicable.

On almost any farm at least one division of operations may be made—the division of agriculture from stock raising. The careful segregation of these two operations for the purpose of accounting control may furnish information of the utmost importance. It is the familiar case of two classes of articles being manufactured; if the costs are not correctly divided between the two, one class may be produced at a profit while the other may be produced at a loss. So long as the profits from the former exceed the loss from the latter, this condition of affairs may go on undetected.

What is true of agriculture and stock raising is equally true of their subdivisions. For the purpose of accounting control a department should be established for each kind of live stock produced and so far as practicable for each kind of agricultural product.

The Records—General Books

The general books do not differ from those of other business concerns. It will usually be found that a ledger, general journal, cash receipts record, check record, and sales journal should be used; the particular kind of book to be used for each is a matter

of individual preference but it should be pointed out that the cash books and sales journal should be so arranged that the entries in them will be classified in accordance with the scheme of departmentization adopted.

Let us assume that the operations of a ranch include the following:

1. Live stock
   (a) Cattle
   (b) Horses
   (c) Sheep
   (d) Hogs
2. Produce
   (a) Wheat
   (b) Oats
   (c) Barley
   (d) Alfalfa
   (e) Timothy
   (f) Wild Hay
   (g) Potatoes
   (h) Garden

In the cash receipts record there should be money columns headed as follows: Total, General Ledger, Charge Accounts, and Cash Sales. In the check register the first money column should be headed Total and following that should be columns headed to correspond with each of the operations enumerated above under the headings Live Stock and Produce; also columns headed for other accounts that are active enough to justify columns being set aside; the last columns should be headed as follows:

Miscellaneous Accounts
1. Name of Account
2. Amount

Disbursements affecting accounts for which no columns have been set aside should be entered here.

The columns in the sales journal should correspond with the accounts listed above under the headings, Live Stock and Produce, and in addition a column for miscellaneous sales. Double columns should be carried for each of these headings, one for quantities and the other for values. The purpose of carrying these columns for quantities is to provide a check on the quantities to be accounted for.

Subsidiary Records

Where an extensive analysis of expenses is desired, subsidiary expense records may be used to advantage. For instance, a controlling account may be established for house expenses; in a subsidiary columnar record an analysis of this account should be made to show groceries, fuel, meat purchased, meat butchered, repairs and replacement of house equipment, cook, etc.

Similarly a controlling account for repairs of equipment may be divided in a subsidiary record to show separately the repairs to grain equipment, hay equipment, horses equipment, irrigation equipment, house equipment, etc.

Other similar analyses may be made, the extent to which they should be carried being governed by the degree to which it is desired to divide the operating expenses.

Statistical Records—Acreage

A record should be kept of the acres devoted to each crop. This information is used in several ways, including the following: If the plowing, harrowing, etc., done to put the ground in proper condition for seeding, is finished before the fields are plotted for the different crops, an account must be opened for plowing, another for harrowing, etc., to which all costs of these operations are charged. When the acreage is determined those accounts are distributed to the various crops on the basis of the figures shown in the acreage record.

Similarly repairs to the main irrigation system may usually be equitably distributed over crops on the acreage basis.

Another instance is that of repairs and depreciation of equipment used in harvesting grain, hay, etc. This may be distributed to the crops on either of two bases, acreage or production. The production in bushels of grain or tons of hay may be quite different in the case of two crops occupying the same acreage, due to the nature of the crops, weather conditions or other factors. The labor and equipment used in harvesting two crops of equal acreage would be approximately the same, regardless of the yield; the same acres must be gone over with the mower or binder and about the same volume of straw must be put through the threshing machine whether the yield in grain is heavy or light. There may be some variation, as a light grain yield may be accompanied by a light straw yield but this is not always the case and in any event the two cannot be said to be proportionate. In view of these facts, acreage seems to be the best basis for distribution of these expenses. The information furnished by the acreage record is also used in the crop record described below.

The acreage record should be made continuous from year to year by providing a column for each year. Down the side of the page should be written the names of the different crops, and the acreage each year extended into the proper column.

Crop Record

A crop record in which statistics are entered each year will be found to be a valuable aid to the farm operator. This record should be a columnar book, with a page for each crop and a column for each year's statistics. Down the left side of the page titles should be written indicating the nature of the information to be recorded. The following is suggestive, but may be varied to meet individual needs:

	1922	1921	1920	1919
1. Acres	....	....	....	....
2. Yield (total)	....	....	....	....
3. Yield per acre	....	....	....	....

	1922	1921	1920	1919
4. Average yield in the state per government statistics	....	....	....	....
5. Cost of production	....	....	....	....
6. Cost of production per unit	....	....	....	....
7. Average market value per unit	....	....	....	....
8. Average market value of yield of one acre	....	....	....	....
9. Cost of yield of one acre	....	....	....	....
10. Gross profit on one acre	....	....	....	....
11. Date commenced seeding	....	....	....	....
12. Date finished seeding	....	....	....	....
13. Date commenced harvesting	....	....	....	....
14. Date finished harvesting	....	....	....	....

The information will be different in the case of such products as milk, butter, cream, fruit, etc., but the above schedule is indicative of the kind of information that should be kept. The idea should always be to show the number of units into which the source is divided, e.g., number of acres in the case of hay, grain, or roots (crops growing under ground, as potatoes); the number of cows in the case of milk, butter, and cream; the number of trees in the case of fruit, etc. The total yield should also be shown and the yield per unit of source, as well as other information suggested in the schedule above.

Live Stock Records

Records similar to those for crops described above should be kept for live stock. A page will be used for each kind of live stock and the following information may be shown:

	Number of Head				
	1922	1921	1920	1919	1918
1. Inventory beginning of year	....	....	....	....	....
2. Purchases	....	....	....	....	....
3. Born	....	....	....	....	....
4. Total	....	....	....	....	....

	1922	1921	1920	1919	1918
5. Inventory end of year	....	....	....	....	....
6. Sold	....	....	....	....	....
7. Butchered	....	....	....	....	....
8. Lost	....	....	....	....	....
9. Total	....	....	....	....	....
10. Pounds butchered	....	....	....	....	....

The above is to be used when the live stock is raised primarily for sale. If it is raised principally for consumption the information should be as follows:

	Number of Head	Amount
1. Inventory beginning of year	....	$......
2. Purchases	....	....
3. Born (or branded)	....	
4. Expenses		....
5. Total	....	$......
6. Inventory end of year	....	$......
7. Sold	....	....
8. Lost	....	
9. Total	....	$......
10. Butchered (No. 5 less No. 9)	....	$......
11. Pounds butchered	....	....
12. Cost per pound butchered	....	....

In the above schedule the statistics are arranged with the idea of showing what the meat consumed has cost. No amount is entered in the amount column opposite items 3 and 8, and no amount is entered in the number of head column opposite item 4. For comparative purposes two columns, Number of Head and Amount, should be provided for each year to be compared.

Owing partly to the heavy mortality among the very young animals and partly to the convenience of the method, the new

live stock "crop" is usually recorded at the time the animals are branded or marked. For that reason item 3 above is entitled "born or branded."

Special records are also kept for registered, pure-bred stock, showing register number, ancestry, characteristics, and other information. These records may be procured in standard printed form.

Labor Record

The purpose of the labor record is to distribute the labor costs of both men and horses to the various enterprises conducted on the farm.

Labor is the largest item of farm cost. Its distribution is also the most difficult of all the expenses.

It is impossible to charge all labor costs directly to the activities affected at the time the work is done for the reason that the total cost per hour or day is not known at the time. Take, for instance, the work of a man: The price paid for help is definite but the cost of his board has not yet been determined and the cost of boarding the men is as much a part of the labor cost as wages. Work performed by the owner and his family must also be considered and a charge made therefore in the Labor account. The problems connected with horse labor costs are similar.

It is, therefore, necessary to wait until the end of the fiscal period to make the entries distributing board of men and horse expense. In the meantime, however, a record must be made of the time spent on the various farm activities. In the case of men this is done in terms of man-hours or man-days; in the case of horses, horse-hours or horse-days. That means, for example, that 2 men and 4 horses working 10 hours would make 20 man-hours and 40 horse-hours.

The records used to compile these data consist of a chronological record of labor performed and a ledger. The chronological record may be illustrated as follows:

Date	Nature of Labor	Man-Hours	Horse-Hours
April 1	Plowing for corn................	10	30
" 2	To town for seed corn............	3	6
" 2	Work on garden.................	4	
" 2	Repairing fences................	2	2
" 3	Planting corn..................	5	10
" 3	Branding cattle.................	4	2

Each item is posted from this record to the labor ledger which is the same as the above in form except that a page is set aside for each enterprise to which all labor on behalf of the particular enterprise is posted. For example:

Corn

Date	Nature of Labor	Man-Hours	Horse-Hours
April 1	Plowing for corn................	10	30
" 2	To town for seed corn............	3	6
" 3	Planting corn..................	5	10

When all items in the chronological record have been posted, the totals from the labor ledger must equal the total in the record.

Theoretically, the time spent on various jobs should be entered daily, but practically this is often found difficult. In certain cases periodical estimates may be made with equal accuracy and less work. Take, for instance, the work usually termed "chores," which consists of feeding the various kinds of stock, milking, etc. The time consumed in these various operations does not change materially from day to day, therefore a record may be made monthly. When the entry is made, the estimated time spent in doing chores during the month is entered in the record showing the amount of time spent in caring for each kind of stock. From there it is posted to the respective accounts in the labor ledger.

At the end of the year when the total cost of labor and total horse expense have been determined, the total man-hours and the total horse-hours for the year divided into their respective cost accounts will give a rate per hour for each. A complete distri-

bution of these costs can then be made by applying the rates so found to the hours shown in each account in the labor ledger.

Take, for example, the following summary of the labor record:

	Man-Hours	Horse-Hours
Corn	9,000	18,000
Oats	3,000	6,000
Alfalfa	1,500	3,500
Horses	300	600
Hogs	600	600
Cattle	2,700	2,400
Garden	300	600
Repairs (Equipment)	150	...
Repairs (Improvements)	450	300
	18,000	32,000

Suppose the total cost of labor is $5,400 and horse expense $3,200. Dividing those amounts by the number of man-hours and horse-hours respectively, establishes a rate of 30 cents per man-hour and a rate of 10 cents per horse-hour. These rates applied to the various farm operations will give the cost of men and horses for each operation; for instance, corn will show 9,000 man-hours at 30 cents, or $2,700 for labor, and 18,000 horse-hours at 10 cents, or $1,800 for horses. The total cost of men and horses in the production of the corn crop will be $4,500.

All labor may be grouped as above, provided there is no material variation in rates of wages. If there is a considerable difference the employees should be classified according to rate and the time and wages kept separate so that varying rates per man-hour may be established.

If the foreman's or manager's time is so spent that it can be allocated to the different farm activities, his time should be recorded separately in the manner described above, arriving at a rate per hour for the manager's salary; if, however, as is often the case, his duties are so divided as to make allocation impracticable, it will be necessary to apportion it on some other basis. Perhaps

the most satisfactory method is to apportion it on the basis of man-hours from the labor record.

Where a tractor or truck is used, a record should be kept of the work performed by it similar to the one for horses. This can be done by providing another column in the labor record headed Tractor, Truck, or Machine-Hours. A corresponding expense account should be carried in the books. This divided by the machine-hours at the end of the year will give for purposes of distribution a machine-hour rate.

Consumption Record

In order to know the cost of producing crops, live stock, or other products it is necessary to keep a record of all products consumed in producing others. For instance, grain may be used as seed for producing a new crop; grain and hay may be fed to live stock to produce meat, dairy products, wool, horse-power, etc.; cattle, hogs, sheep, and poultry may be consumed as food and become a part of labor cost, and so on.

Another reason for keeping such a record is to provide a check on the various products to be accounted for. At the beginning of the year the inventory will show certain quantities on hand; during the year additional quantities are produced; and the sum of the two represents the amount to be accounted for at the end of the year. The sales journal will show what has been sold and the closing inventory will show what remains on hand at the end of the year. The difference between the sum of these two and the total to be accounted is often erroneously regarded as the amount consumed. Many things may account for this difference besides ordinary consumption; some of the crop may have been destroyed by fire or water; some may have been stolen; some may have died (in the case of live stock), etc. Consideration of these facts shows something of the importance of keeping a record of consumption in order that losses may be known.

Still another reason for keeping a record of consumption is to show how the crop is consumed in order that charges may be

made to the proper accounts. For instance, wheat may be used for seed, in which case it is charged to Wheat Expense, or it may be fed to horses, in which case it is charged to Horse Expense, or if fed to hogs and chickens, it is charged to Hogs Expense and Chicken Expense, respectively, or again it may be milled and the flour used for food.

Breeding Record

A breeding record is desirable for many reasons, of which the following may be mentioned: (1) to know when to expect deliveries; (2) to show which animals are good breeders and which are not, and (3) to have an original record of increase from which item 3 of the live stock record may be posted or verified. This record is practicable only when the stock is closely handled.

The record should contain columns headed as follows, except in the case of registered animals for which a full page is used for each animal:

1. Name of Female
2. Name of Male
3. Fee
4. When Bred
5. When Due
6. Delivered
7. Sex

Poultry and Egg Record

At least a simple record of poultry operations should be kept. A form for this purpose is a sheet with 12 horizontal lines, one for each month of the year, and 33 vertical columns, one for each day of the month, one for the monthly total, and one for the market value. The total eggs produced should be entered daily in order that the last column will show the total value of eggs produced during the year. The following information should be provided for at the bottom of the page:

Poultry	Number	Value
1. Stock at end of year....................	....	$.....
2. Stock sold..........................	....	.....
3. Estimated stock eaten................	....	.....
4. Total accounted for..................	....	$.....
5. Stock at beginning of year............	....	.....
6. Total produced during year............	....	$.....

Eggs	Dozen	Value
1. Eggs sold...........................	....	$.....
2. Estimated eggs eaten................	....	.....
3. Total produced during year............	....	$.....

The sales in both summaries are obtained from the sales records and the number shown as produced in the eggs summary must agree with the egg record described above.

Miscellaneous Information

In addition to the above records others of considerable statistical value may be compiled. The extent to which information of this kind is recorded depends upon its importance in the management of the farm. For instance, a miscellaneous record in the form of a blotter or diary is sometimes kept for such information as the state of weather, animals lost by death or otherwise, unusual change in market conditions, etc.

II. Inventories

Fiscal Year

The chief consideration governing the selection of a fiscal year in any business should be the inventory. At the end of the fiscal year inventories must be taken, and if there is any regular time during the year when the inventory is lightest, that should be chosen as the end of the fiscal year providing there are no other considerations of sufficient importance to outweigh that advantage.

March 31 is usually found a convenient time to close the year

on the farm in most sections of the United States. By that time most of the preceding year's crops have been disposed of and all expenses in connection therewith completed, while but little work has been done on the succeeding year's operations. Whatever work has been done toward producing the next year's crops should be carried as a deferred charge on the books. Any early increase in live stock occurring before March 31 may be inventoried and considered as a part of the "crop" of the current year.

April 30 is adopted for the end of their fiscal year by some of the largest breeders, and where cattle raising is the chief or only operation engaged in, that date will usually be found more satisfactory.

Inventories

Inventorying on the farm falls naturally into two classes and each of these classes may be divided into two groups, each division requiring a different procedure. The divisions are as follows:

1. Capital Assets
   - (a) Improvements
   - (b) Equipment
2. Products
   - (a) Produce
   - (b) Live stock

Capital Assets—Improvements

Improvements include buildings, fences, and work done to put the land in condition for use. The last mentioned item does not require inventorying, since ordinarily it does not change in quantity or value. When a piece of land is broken or cleared of rocks, brush, or trees to make it tillable, the work does not have to be done again; in other words, it is not subject to deterioration, neither is it subject to appreciation in value; therefore the cost of such work is set up on the books as a capital item and the value is never changed.

There are a few exceptions to this case, as, for example,where the ground is broken or cleared and then allowed to go back to its original state through failure to cultivate. In such cases the cost of improving should be written off.

Buildings and fences are subject to ordinary depreciation, the rate of which may be fairly definitely established. Depreciation of buildings on the farm will conform to the same rates as those of similar construction elsewhere in the same climate, and fences have a pretty definite life, depending upon the kind of posts and other material used. Since accurate rates of depreciation may be applied to such improvements, they can best be inventoried each year by the depreciation method.

Equipment

Equipment is subjected to such a variety of conditions on the farm that satisfactory rates of depreciation are difficult to establish. If it is properly sheltered the depreciation will be much less than if it is exposed to the weather. Machinery will naturally last longer when used on smooth ground than when used on rough ground. Harness properly oiled and repaired will outwear harness not properly cared for. Another difficulty lies in the fact that the rates of depreciation vary much on different pieces of equipment.

Perhaps the most satisfactory method under ordinary circumstances is to appraise the equipment. Not only will more accurate valuations result from this method but a better control will be had on the equipment to be accounted for. In order to realize this last result, the equipment account should be analyzed and the articles listed alphabetically. This can be done by merely writing down the names of the various articles and providing three columns, one for the insertion of the quantities to be accounted for according to the equipment account, one for the inventory account, and one for the values. After the inventory is taken, the first column should be filled in and compared with the quantities shown by the count. In this way losses or other

discrepancies will be detected and a control exercised over all equipment.

This procedure will be facilitated by keeping a card record on equipment, a card being used for each kind of machinery or tool. New equipment bought should be posted to these cards so that they will always agree in aggregate with the equipment account in the ledger. A list for inventory purposes can be readily prepared from the cards.

When the appraisal of equipment has been completed, the difference between the cost and the appraised value should be set up as a Depreciation Accrued account and not entered in the Equipment account. The reason for this is the same as for setting up in separate accounts the depreciation of assets arrived at by the percentage method.

Farm Produce Inventory

In inventorying produce, i.e., grain, hay, vegetables, fruit, etc., either of two bases of valuation may be taken; cost or market value.

If the valuation is based on cost, the price per unit will include all direct and overhead expenses incident to putting the product into the shape it is at inventory time, and will be arrived at as follows, where none of the inventory at the beginning of the year remains at the end of the year:

	Quantity Bushels	Cost per Unit	Total Cost
1. Inventory beginning of year..	1,000	$1.50	$1,500.00
2. Produced during year.......	3,000	1.75	5,250.00
3. Total...............	4,000	$1.68¾	$6,750.00
4. Sales from old stock.........	800	$1.50	$1,200.00
5. Used from old stock.........	200	1.50	300.00
6. Sales from new stock........	500	1.75	875.00
7. Used from new stock........	500	1.75	875.00
8. Total................	2,000	$1.62½	$3,250.00
9. Inventory end of year.......	2,000	$1.75	$3,500.00

Since it is known that none of the inventory at the beginning of the year remains on hand, the inventory at the end of the year is all figured at $1.75 per bushel, the cost of producing the new crop.

Where a part of the inventory at the beginning of the year remains on hand allowance should be made for any differences in value unless the inventory at the beginning of the year is indistinguishable from that produced during the year in which case it is necessary to get an average cost and use this for both the stocks disposed of and those remaining on hand.

From the above it will be seen that either of three results may be obtained in handling the same quantities and costs, depending upon the manner of handling the stocks.

As stated above, the inventory values may be based upon market value; that is to say, from the market value a figure representing the value in the hands of the producer is obtained. The produce on hand is not worth what it can be sold for because the farmer will have to pay for loading and transporting it to market, perhaps pay a commission to a broker, and suffer some loss through spoilage, shrinkage, etc. So in order to place a fair valuation on the unmarketed product it is necessary to estimate all costs which will subsequently be borne in the process of marketing and deduct these from the market price at the date of inventory.

The chief objection to this method is that it anticipates a profit. If the price determined by the market value method is greater than the actual cost of production, a profit representing this difference will be reflected in the income of this period although the produce remains unsold.

Where accurate costs have been kept, the cost basis of inventorying is preferable but in case this method cannot be used it is advisable to deduct a certain amount, say 10%, from the value determined by the market price method. This will have the effect of deferring at least a part of the anticipated profits to the subsequent year where they properly belong, and at the same time create a reserve for unexpected losses and expenses.

Live Stock

Live stock presents a peculiar problem in that the growing animals represent unfinished products, the cost of which cannot be satisfactorily determined. In the case of grain, hay, and other produce the crop is planted, matured, and the finished product harvested all within the year, but with live stock, expenses are incurred in taking care of the herd as a whole and at the end of the year the inventory shows animals of various ages but the cost of producing the different classes is difficult to determine. Mature breeding animals have been fed through the year but the cost of feed and care cannot be added to their value at the beginning of the year; as a matter of fact they may have actually depreciated due to age or other cause, but they will seldom increase in value except through market changes which, of course, do not affect costs. Animals being prepared for market increase in value usually in proportion to their added weight. Younger animals increase in size and value but they have perhaps not consumed as much feed as the mature ones. Young ones have been produced which have a value although they have entailed no direct cost.

Let us see if the cost of raising live stock can be equitably allocated to the various classes. Take first the cost of feeding and caring for the mature breeding animals. As stated above, nothing is added to their value; therefore, the expense must be charged to some other account. It does not add to the value of the growing animals and if it is strictly a breeding herd it does not produce any income other than the young ones; therefore all these expenses, including depreciation of the breeding herd, are properly charged to the cost of producing the increase in the herd.

Next let us consider the cost of feeding and caring for the mature animals which are being prepared for the market. All such expenses unquestionably represent the cost of producing the marketable animals, just as labor and expenses are applied to any raw material to produce the finished article. In other words, it is a manufacturing operation and the cost of caring for such animals is a manufacturing cost.

The cost of caring for growing animals for a year or any other period represents a part of the manufacturing cost necessary to complete the operation. In other words, they are "goods in process" that have gone through one stage of production but have not reached the point of completion. The cost may therefore be properly added to the inventory value at the beginning of the year to get the value at the end.

As stated above, young animals produced during the year have entailed no direct expense, such as feed, etc.; hence their inventory value would be merely the cost of maintaining the breeding herd.

Animals kept neither for the purpose of breeding nor for sale in the market, such as work horses or dairy cows, are in a different class entirely, inasmuch as they are not directly employed in the production of finished animals for the market. The horses, for example, are employed in raising crops, caring for other animals, etc. The expenses are allocated to these operations and constitute a part of the cost thereof and do not affect the inventory value of the horses.

Any colts produced by work mares or calves produced by dairy cows are merely by-products and may be treated as such by allocating to them a proper portion of the cost of maintaining the producing herd. This will operate as a reduction of the costs chargeable to crops, dairy products, or other operations in which the producing animals are employed.

Another somewhat similar but more difficult problem is presented in the case of growing animals employed in other operations. Where such animals are not used for other purposes all costs of raising may be capitalized by being added to the value of the animals, but where they are otherwise employed a part of such costs should be charged to the operation in which they are used.

For instance, if a 2-year old heifer bears a calf, there has been an income due to such increase and also an income due to the growth of the heifer. If she had not borne the calf, all cost of

maintaining her would have been added to her value at the beginning of the year to get her value at the end of the year. If the calf had been produced by a full-grown cow all the cost of keeping the cow during the year would have been capitalized as the inventory value of the calf. But here we have one animal producing a double income neither part of which is affected by the other, yet if we take actual cost for the purpose of inventory the value of either the heifer or the calf or both must be understated.

From the above it will be seen that all animals used on the farm may be divided into two general classes: those in process of development, and those not in process of development. The former includes growing animals and mature animals which are being prepared for market. The latter includes all other mature animals. The former represents animals that are increasing in value while the latter represents those used as equipment and is analogous to machinery in a factory.

With the exception of instances such as those discussed above where certain animals belong in both classes, the theory of using actual costs for the purposes of inventorying live stock seems satisfactory; yet a practical application of the theory is dependent upon the ability to determine what the costs are of developing or maintaining the two classes and their respective groups. It must be possible to ascertain the costs applicable to the following groups:

Class 1. In process of development:
- (a) Growing animals (this group to be subdivided if the cost is different for maintaining animals of different ages).
- (b) Mature animals being prepared for market.

Class 2. Not in process of development:
- (a) Breeding animals.
- (b) Mature animals used for other purposes.

If the cost of each of these groups can be determined then it will be possible to inventory by the cost method but the difficulty

of accurately dividing the costs in this manner renders the cost method unpopular. It is usually necessary to estimate the expenses applicable to each group since they are seldom physically divided as classified above. Group (b) of class 2 above represents the portion of the live stock the cost of which is an expense; the cost of the other groups is capitalized in the inventory. Since under ordinary conditions group (b) of class 2 must be estimated, it follows that not only must the cost of each of the other groups be at least partially estimated, but the total cost to be capitalized is also an estimate. Add to this the difficulty of inventorying where the animals fall into two classes and it will be seen that the cost plan of inventorying is difficult of application. It should not be considered impossible, however, and under certain conditions the principle can be quite satisfactorily applied.

Too often this theory is applied to the extent of adding as additional cost all expenses incident to a certain class of live stock without allocating them to the different groups; that is to say, without determining a unit cost. The result is that when some animals are sold it is impossible to determine their cost except by arbitrary estimate.

Another method of inventorying live stock that has gained considerable favor, due to its simplicity, is that of basing inventory value upon market value. By referring to market quotations the farmer can determine with reasonable accuracy the price at which he is able to sell each class and grade of stock he has on hand. From this price should be deducted the estimated cost of marketing, including freight, handling, commission, etc.

The objection to this method is that it anticipates a profit. If the market value is in excess of the cost, a "paper profit" is reflected in the income of the period which is contrary to good accounting practice. On the other hand cost may be greater than the market value, in which case profits are overstated if the inventory is taken on the cost basis.

As will be seen, there are difficulties in any method that may be adopted. The simplicity of the market value method recom-

mends it for general use although it is not altogether correct in theory; the theoretical correctness of the cost method appeals to the accountant and is undoubtedly preferable where operating conditions render it practicable. It may be argued in favor of the former that in the absence of radical fluctuations in prices, the profit due to natural growth of live stock is a legitimate accrual of profit which may as properly be included in the income of the period as the accrual of interest. This method has received the sanction of the Treasury Department of the government in recent rulings in connection with income tax returns.

In conclusion, it should be stated that where it is possible to obtain costs, in order to conform to the best accounting practice, the cost should be compared with the market value and the lower of the two used as the inventory figure.

Range Cattle

The matter of count is not a problem of any great moment, though this is not always the case. In certain large ranches in the Rocky Mountain region of the United States the annual round-up is the only means by which an actual count of cattle may be made. These ranges are so vast that a thorough round-up is seldom, if ever, made. Sometimes the ranges include what are known as "winter range," meaning a range where live stock can maintain themselves through the winter. Where there is a winter range less care is taken in the round-up for the reason that if any are overlooked they will be counted in the spring round-up.

Since under these circumstances a physical count is impossible it becomes necessary to arrive at an estimated inventory. The estimated inventory must of necessity be based upon experience and percentages used in accordance therewith.

Two things must be estimated: births and deaths. In estimating births two rates must be used, one for cows and one for heifers, since the number of calves borne by 2-year old heifers is much less than cows. In estimating births, it is also necessary to estimate the percentage of males and females. Half-and-half

is generally the proportion used. This may vary between seasons but an average of several years will show that this percentage is about correct. Several rates must be used in estimating deaths. One will apply to calves, another to yearlings, another to 2-year old heifers, another to 2-year old steers, another to cows 3 years old and over, and another to steers of the same age.

The rate of mortality is about the same for both sexes until the age of 2 years, when the heifers begin bearing; after this the rate of mortality is greater among the females.

Where herds of this kind are kept, in order to keep up the standard of the stock a breeding herd of pure-bred or graded cattle is sometimes maintained. This breeding herd is kept close in hand and is not turned out on the range, but each year a certain number of young cows and bulls are selected from this herd and turned loose with the range herd. In addition to these, other cattle are sometimes bought and turned out on the range. So there may be three sources from which the range herd is increased, namely, natural increase (births), pure-breds, and cattle purchased.

In order to keep as accurate a record as possible upon which dependable percentages may be based for the purpose of inventory a distinctive brand is sometimes used for each of these classes, in addition to the owner's brand. When calves are branded the last figure of the year is sometimes used. For instance if the owner's brand is on the right side, and the calf was born in 1921, a figure "1" may be placed on the right hip, the next year's calves are branded with a figure "2" and so forth. By keeping a record of these brands in subsequent round-ups a normal percentage of loss may soon be established.

Before leaving the subject of inventorying live stock it should be stated that so far as actual practice is concerned the course most generally pursued by stockmen, especially western stockmen, is not to bother about the inventory so far as their financial books are concerned. Their original investment and any additions through purchase are carried on the books, but all subsequent

expenditures for feed and care are treated as current expenses and natural increase is treated as income and taken up on the books only when sold. When sales are made from the original herd or those subsequently purchased the cost is deducted from the investment and charged against the gross profits from the sale.

It will be readily seen that this course will eventually lead to the point where the original herd will all be disposed of and charged off and in the meantime an entirely new herd will have been built up, perhaps larger than the original one, but the asset will not be carried on the books.

This method is mentioned because of its prevalence among large stockmen and to point out its fallacy. Agricultural and live stock accounting really began its development after the federal income tax law affecting them was enacted. Many are now adopting more scientific methods, and development in this direction will undoubtedly continue in the future regardless of the course of income tax laws, for stockmen are beginning to see the advantage of the better methods, from a management standpoint.

Closing the Books

In closing the books, care must be taken to adjust and close the accounts in the proper order since in so many cases the results of one operation are incorporated in and become a part of another. The following outline is given as a general guide which in practice may be modified and amplified to meet the operating conditions of the case in hand.

III. Closing Entries

(1) Sundry "Expense" Accounts, etc.	\$......	
Sundry "Consumed" Accounts		\$......
To set up entry covering produce and live stock consumed as per consumption record.		

The quantities consumed are resolved to money value by applying the average of the market prices prevailing during the

year, less the estimated cost of marketing. This is necessary for two reasons: first, because the cost of producing the current year's crops has not yet been determined (it will be noted that this entry adds to that cost through some of the expense accounts affected); second, because the cost to produce an article used in producing another is not a fair price to be used.

Take, for instance, corn-fed cattle. The corn has a definite market value at which it can be sold. If it costs 75% of the selling price to produce it, the Cattle account is getting the benefit of that profit.

Suppose corn costing $1,500 to produce and having a market value of $2,000 was fed to cattle and charged at cost. Suppose, also, that the Cattle account at the end of the year shows $300 profit. Apparently cattle raising is profitable. But suppose the corn is charged at the price at which it could have been sold. Then the Cattle account would show $200 loss and that represents the actual result, for in charging the feed at cost the loss on cattle has been offset against the profit on the feed. In order to tell which operations are profitable and which are not, all produce and live stock consumed should be charged at market price, less the estimated cost to market.

(2) Sundry "Summary" and "Expense" Accounts....	$......	
Sundry "Inventory" Accounts............		$......
To close the beginning inventories into the summary accounts, etc., as: Horses Summary, Cattle Summary, Oats Summary, Alfalfa Hay Summary, etc., which, as the names indicate, are used to gather together all accounts affecting the amount and value of live stock or produce. Also to close beginning inventories of supplies and garden produce into the expense accounts to which they are chargeable, as potatoes, fence posts, repair parts for machinery, etc.		

(3) Sundry "Summary" Accounts.................. ......
Sundry "Purchase" Accounts............. ......
To close the latter accounts in which are recorded purchases of live stock and produce.

(4) Sundry "Sales" Accounts (except garden produce, see entry 10)............................ ......
Sundry "Summary" Accounts............ ......
To close former accounts in which are recorded sales of live stock and produce.

(5) Sundry "Consumed" Accounts................ ......
Sundry "Summary" Accounts............ ......
To close the former accounts.

(6) Sundry "Expense" Accounts, etc. (This is an inclusive term used to represent the various accounts to be debited.)................... ......
Sundry "Produce" Summary Accounts (This is an inclusive term used similarly.) ......
For produce unaccounted for.

After taking into account the produce of each kind accounted for, e.g., oats, wheat, hay, potatoes, etc., it will usually be found that there is a balance unaccounted for, or possibly it may be overaccounted for. This is due partly to natural shrinkage but more often to inaccurate measurements or estimates of amounts consumed. This difference, however, should be very small. If it is large, a careful analysis should be made of the produce account in which the shortage occurs, the cause determined, and entries made charging the proper accounts. If the difference is normal, an entry should be made as above, charging the various accounts in proportion to the quantities consumed per the consumption record. This is on the theory that the difference is most likely due to errors in estimating consumption.

The figures to be used in the entry are arrived at as follows, this being an illustration of the calculation to be made for each product:

Inventory at beginning of year (per Inventory account)		$......
Purchases (from purchase accounts)		......
Produced (from crop record)		......
Total to be accounted for		$......
Sold (from Sales account)	$......	
Consumed (from consumption record)	......	
Otherwise accounted for (from general journal)	......	
Total accounted for		......
Unaccounted for		$......

This should be reduced to money value for the purpose of journalizing by applying the price per unit used in the inventory at the beginning of the year. This is necessary for the reason that the cost of producing the current year's crops has not yet been determined.

(7) Horses Inventory	$......	
Horses Summary		$......
To set up closing inventory of horses.		

Horses in this particular case are assumed to be kept primarily for the purpose of work; and they are therefore considered as equipment and similarly appraised. Other live stock and the various produce inventories are not set up at this point in the process of closing because they will be inventoried at cost, and the cost has not yet been determined.

(8) Sundry Produce "Expense" Accounts	$......	
Sundry Live Stock "Expense" Accounts		$......
To credit the several classes of live stock and charge the crop accounts with the value of manure used as fertilizer.		

The United States Department of Agriculture in bulletin 511 names $1 per ton as a fair value.

(9) Horses Expense	$......	
Horses Summary		$......
To close the latter account.		

Ordinarily there will be a debit balance in this account, since work horses will usually be subject to depreciation but never to appreciation. This is on the theory that equipment should never be appreciated on the books since it is not subject to sale in the ordinary course of business and therefore a profit cannot be realized. An exception to this is the case of young horses which increase in value through growth. If such increase together with the profit on sales more than equals the depreciation, the balance of the Horses Summary account will be on the credit side, in which case the entry above will be reversed. Horses Summary account is closed at this point because it enters into expense of maintaining the horses, which expense in turn enters into the cost of other live stock and produce.

(10) Garden Produce Sold........................	$......	
Garden Expense.......................		$......
To close the former account.		

This is based upon the assumption that the garden is kept primarily for the purpose of providing food and not of raising produce for sale. The profit on any sales therefore is treated as a reduction of the expense of raising the garden.

The profit might be treated as an income item and so shown in the profit and loss statement, but if this is done the cost of the produce sold should be credited to Garden Expense and be shown as a deduction from the sale on the profit and loss statement, in order to show the net profit from the sale. The determination of the cost is quite difficult, if not impossible, and it is therefore preferable to treat it as above.

If the garden is raised primarily for the purpose of selling produce, a record should be kept of the amount consumed and an entry made charging Garden Produce Consumed and crediting Garden Produce Summary at market value, the latter account being treated similarly to the other summary accounts above, the final balance representing the profit on the garden. In this case

Garden Produce Consumed is closed in the House Expense as a part of the cost of food.

(11) Income from Breeding........................ $......
    Sundry Live Stock "Expense" Accounts.. $......
    To close former account.

It is assumed in this case that males maintained for breeding purposes are primarily for use of the owner and income derived from breeding fees is therefore treated as an offset to the expense of the herd.

(12) Sundry Miscellaneous "Inventory" Accounts.... $......
    Sundry "Expense" Accounts............ $......
    To set up inventories of supplies and garden produce.

(13) Sundry Grain "Expense" Accounts............. ......
    Sacks................................ ......
    To distribute cost of sacks in proportion to their use.

Sacks are bought for use in handling various kinds of grain. At the time of purchase it cannot be foreseen for which grain they will be used. Therefore, it is necessary to charge them to a Sacks account and to distribute the charge as above when they are used. If any sacks are left on hand these should be taken into account by distributing the balance in the account, less the value of the inventory which will be entered later.

(14) Sundry "Expense" Accounts................. $......
    House Expense...................... $......
    To charge certain expense accounts with cost of board on the basis of the labor record.

As previously explained the cost of board cannot be distributed at the time the pay-roll is distributed for the reason that the cost is not known at that time.

At this point, in the process of closing, we still have not ascertained the cost of board. It now becomes necessary to estimate it in order to close certain expense accounts which enter

into the cost for the current year. For instance, time has been spent in caring for horses but the cost of boarding the men during this time has not been charged to Horses Expense. Horses have been used in making garden so Garden Expense should be charged with its proportionate part of the total Horses Expense; Garden Expense is one of the accounts that go to make up House Expense which represents the cost of board.

This illustrates why it is necessary to estimate the board for the purpose of closing those accounts which go to make up the house expense for the current year. The preceding year's cost for board per man-hour will usually be found the most satisfactory, but if there are circumstances which will make the rate inequitable it may be estimated on a different basis.

The accounts to be charged with board at this point, as indicated by the above entry, are only those which will eventually be closed into the House Expense account, and any accounts that will otherwise affect the House account. Ordinarily there will be none of the latter class, except Horses Expense.

(15) Sundry "Expense" Accounts, etc.	$......	
Manager's Salary		$......
To charge the various accounts with the manager's salary on basis of man-hours per labor record.		
(16) Sundry "Depreciation" Accounts	......	
Sundry "Depreciation Accrued" Accounts		......
To set up depreciation on equipment and improvements.		

The various depreciation expense accounts are kept separate because some enter into the cost of one product and some another.

(17) Garden Expense		$......
Depreciation on garden equipment.		
Irrigating Expense		......
Depreciation on irrigating equipment	$......	
Depreciation on flumes and pipelines	......	
Total	$......	

Sundry Live Stock "Expense" Accounts........ ......
Charging the various live stock accounts with the depreciation on improvements and equipment used in their behalf.

Profit and Loss.................................. ......
Depreciation on fences..............$......
Depreciation on telephone lines..............
Depreciation on general equipment...........
Total...........................$......
Sundry "Depreciation" Accounts......... $......
To close latter accounts.

The following depreciation accounts should not be closed in this entry as they will be handled in subsequent entries:

Depreciation on Grain Equipment
Depreciation on Hay Equipment
Depreciation on Plowing and Harrowing Equipment
Depreciation on House Equipment
Depreciation on Houses

(18) Sundry "Expense" Accounts.................. $......
Interest on Investment.................. $......
To charge the various expense or cost accounts with interest on the investment in property used.

For instance, if 100 acres are devoted to a certain crop, interest on the value of that land should be charged to that crop as should also the interest on the value of the equipment. Similarly interest on the value of the horses should be charged to Horse Expense. In making this entry, the interest on the entire invested capital should be distributed. This is important in order to show whether or not the various enterprises engaged in are paying more than the interest on the money invested, or whether or not this may be true of the entire farm. Interest on capital invested in assets other than land, improvements, equipment, and live stock may be charged to General Farm Expense since the attempt required to allocate it to the various operations would hardly be justified.

Theoretically the average investment during the year should be taken, but in the absence of radical changes the preceding balance sheet may be used as the basis for calculation.

(19) Horse Expense	$......	
Sundry "Repairs" Accounts		$......
To close accounts representing repairs of improvements and equipments used for or on account of horses.		

(20) Sundry "Expense" Accounts, etc.	......	
Horse Expense		......
Distributing horse expense on the basis of horse-hours or days as shown by the labor record.		

The rate to be applied to the horse-hours shown there is obtained by dividing horse expenses by the total horse-hours.

(21) Chicken Summary	$......	
Chicken Expense		$......
To close latter account.		

(22) House Expense	......	
Chicken Summary		......
To close latter account.		

If a proper record has been kept of chickens and eggs consumed, the balance in this account should be small, but there will always be a balance due partly to the credit of eggs produced and partly to the fact that the chickens consumed have been figured at last year's prices.

(23) Garden Expense	$......	
Irrigating Expense		$......
To charge the former account with its proportion of the cost of irrigating.		

Where irrigation is employed in the production of crops, the cost of supplying water cannot be charged directly to the various crops since much of the expense is general. An irrigation system usually consists of a main canal, flume, or aqueduct from which subcanals are extended and from these in turn run laterals

extending into the fields. The cost of upkeep of canals, flumes, aqueducts, and subcanals may be chargeable to many crops, depending upon the number they serve. The cost of attending the laterals and actually applying the water to the respective crops will usually be uniform in proportion to acreage. For this reason all irrigating expense is usually charged to one account and distributed to the crops on the basis of acreage. If conditions are such that the cost of applying the water cannot be equitably distributed on the basis of acreage, the expense thereof should be charged directly to the crops affected, leaving only the cost of conveying water to the laterals to be apportioned.

Assuming in this case that all cost of providing water can be equitably distributed on the basis of acreage, Garden Expense will be charged with its pro rata part, but since the cost of irrigation for the current year has not yet been determined it is necessary to apply the cost per acre for the preceding year.

(24) House Expense..............................	$......	
Meat Purchased........................		$......
Pork Butchered........................		......
Beef Butchered........................		......
Poultry and Eggs.....................		......
Groceries..............................		......
Fuel...................................		......
Garden.................................		......
Cook...................................		......
Depreciation of Houses................		......
Depreciation of House Equipment........		......
Repairs Houses........................		......
To close all accounts making up the cost of running the houses, which represents the cost of board.		
(25) Sundry "Expense" Accounts, etc...............	......	
House Expense........................		.....
To close the latter account, distributing it on the basis of man-hours as shown by the labor record, excluding time charged to accounts already closed.		

It is assumed in this case that the organization is a corporation and that the house is conducted solely for the purpose of boarding the men employed. In this case certain problems involved in the case of individual ownership are avoided. Where the form of organization is that of individual ownership the house is run for two purposes: boarding farm workers, which is a farm expense chargeable to farm operations; and raising the family, which is a purely personal expense and is not chargeable to farm operations. It is customary in instances of this kind to charge House or Household with the cost of running the house as has been done herein, but instead of charging out all house expense as cost of board, an agreed amount per person engaged in farm work is charged to Board and credited to House. Operations are charged and House credited also with a fair amount for the labor of each member of the household. The balance of the House account then represents personal expense of the family and is treated not as a farm expense but as an application of profits.

(26) Depreciation Accrued on Fences..............	$......	
Repairs to Fences......................		$......
To close latter account.		

This is on the assumption that all such repairs are in the nature of replacements, as is usually the case.

(27) Plowing and Harrowing Expense, Miscellaneous..	$......	
Depreciation Plows and Harrows.........		$.....
Repairs Plows and Harrows.............		.....
To close latter accounts representing general expenses that cannot be charged directly to the various crop accounts.		

(28) Sundry Produce "Expense" Accounts..........	......	
Plowing and Harrowing Expense—Miscellaneous..........................		......
To close latter account distributing it on the basis of acres plowed and harrowed, per acreage record.		

(29)	Straw Summary	......	
	Straw Expense		......
	To close latter account.		
(30)	Hay Expense, General	......	
	Depreciation Hay Equipment		......
	Repairs Hay Equipment		......
	To close latter accounts representing general expenses that cannot be charged directly to the various hay crops.		
(31)	Sundry "Hay Expense" Accounts	......	
	Hay Expense, General		......
	To close latter account, distributing it on the basis of tons harvested.		
(32)	Grain Expense, General	......	
	Depreciation Grain Equipment		......
	Repairs Grain Equipment		......
	To close latter accounts representing general expenses that cannot be charged directly to the various grain crops.		
(33)	Sundry "Grain Expense" Accounts	......	
	Grain Expense, General		......
	To close latter account, distributing it on the basis of bushels or hundred-weight threshed.		
(34)	Irrigating Expense	......	
	Repairs Flumes and Pipelines		......
	To close latter account.		
(35)	Sundry Produce "Expense" Accounts, (Excluding Garden)	......	
	Irrigating Expense		......
	To close latter account, distributing it on the basis of acres irrigated. Garden is excluded, since it was charged with the estimated cost of irrigation in entry 23.		

(36) Sundry "Expense" Accounts..................	......	
Sundry Repairs Accounts...............		......
To close accounts representing any repairs of improvements or equipment not already charged off, charging them to accounts receiving the benefits thereof.		

For example, repairs to cattle sheds should be charged to Cattle Expense, etc.

(37) Straw "Summary".........................	$......	
Sundry Grain "Expense" Accounts.......		$......
To close former account, distributing it as a by-product to the various grain crops.		

Under normal conditions this may be on the basis of yield in bushels. If certain crops have not borne normally, an acreage basis may be more equitable since the straw produced will generally be uniform even though the grain yield is low. For this reason, distribution on the basis of acreage will be found more satisfactory for general use.

(38) Sundry Produce "Summary" Accounts.........	$......	
Sundry Produce "Expense" Accounts....		$......
To close latter accounts.		
(39) Sundry Live Stock "Summary" Accounts.......	......	
Sundry Live Stock "Expense" Accounts..		......
To close latter accounts. Horse Expense has already been closed (see entry 20), also Chicken Expense (see entry 21).		
(40) Sundry Produce and Live Stock "Inventory" Accounts................................	.....	
Sundry "Summary" Accounts...........		......
To set up closing inventories. Horses inventory has already been entered (see entry 7).		

Inventories are priced in accordance with principles previously laid down.

(41) Sundry "Summary" Accounts................	$......	
Profit and Loss......................		$......
To close former accounts, which represent profit on the different crops of produce and live stock.		

If a loss has been sustained the balance will be on the debit side of the "Summary" accounts requiring another entry the reverse of this one.

(42) Taxes General...........................	$......	
Taxes Federal...........................	......	
Taxes General Accrued.................		$......
Taxes Federal Accrued..................		......
To accrue taxes.		
(43) Sundry "Income" Accounts..................	......	
Profit and Loss......................		......
To close former accounts which cover all income derived from sources other than live stock and produce.		
(44) Profit and Loss...........................	......	
Sundry Expense Accounts..............		......
To close latter accounts covering all expenses other than those chargeable to live stock and produce, which have already been closed into their respective Summary accounts.		

Financial Statements and Statistics

Typical pro-forma financial, analytical statements follow.

Other schedules usually presented besides those here shown are accounts receivable and accounts payable which are not different from similar schedules found in other lines of business except that there are ordinarily fewer items, since business is usually done on a cash basis, especially in the case of sales.

Meadow Grove Land and Live Stock Company
Balance Sheet
March 31, 1921

Assets

Current:				
Cash			$......	
Accounts Receivable		$......		
Notes Receivable		......		
Total		$......		
Deduct allowances for bad accounts and notes		......	......	
Produce:				
Vegetables:				
Potatoes	$......			
Turnips	......			
Beans	......			
Pumpkins	......	$......		
Grain:				
Wheat	$......			
Oats	......			
Barley	......			
Corn	......	......		
Hay:				
Timothy and Clover	$......			
Alfalfa	......			
Wild	......			
Straw	......	......	......	
Supplies:				
Groceries		$......		
Coal		......		
Fence Posts		......		
Repair Parts for Machinery		......	......	
Total Current Assets				$......

Prepaid Expenses:				
Insurance			$......	
Interest			......	
Rent			......	
Advances on Wages			......	
Total Prepaid Expenses				......
Live Stock:[1]				
Cattle			$......	
Sheep			......	
Hogs			......	
Horses			......	
Chickens			......	
Ducks			......	
Turkeys			......	
Total Live Stock				......
Fixed:				
Equipment:				
Garden	$......			
Deduct Depreciation accrued	......	$......		
Grain	$......			
Deduct Depreciation accrued	......	......		
Hay	$......			
Deduct Depreciation accrued	......	......		
Horse	$......			
Deduct Depreciation accrued	......	......		
Irrigating	$......			
Deduct Depreciation accrued	......	......		

[1] Live stock is put under a separate heading on the balance sheet because it does not represent either current or fixed assets, but rather a combination of both. Those kept for breeding work, or purposes other than sale are of the nature of fixed assets; those requiring 2 or 3 years to mature and prepare for market can hardly be classed as current assets, while those subject to sale are undoubtedly current. Hence they are given a separate heading.

Plowing and Harrowing...	$......		
Deduct Depreciation accrued................	......	......	
House..................	$......		
Deduct Depreciation accrued................	......	......	
General..................	$......		
Deduct Depreciation accrued................	......	......	$.....
Improvements Subject to Depreciation:			
Fences..................	$......		
Deduct Depreciation accrued................	......	$......	
Houses..................	$......		
Deduct Depreciation accrued................	......	......	
Barns..................	$......		
Deduct Depreciation accrued................	......	......	
Sheep Sheds..............	$......		
Deduct Depreciation accrued................	......	......	
Cattle Corrals............	$......		
Deduct Depreciation accrued................	......	......	
Dehorning Chutes........	$......		
Deduct Depreciation accrued................	......	......	
Poultry Houses...........	$......		
Deduct Depreciation accrued................	......	......	
Hog Houses..............	$......		
Deduct Depreciation accrued................	......	......	

Telephone Lines	$......			
Deduct Depreciaton accrued	......	......		
Flumes and Pipelines	$......			
Deduct Depreciation accrued	......	......		
Hay Racks	$......			
Deduct Depreciation accrued	......	......		
Improvements not Subject to Depreciation:				
Clearing[2]	$......			
Breaking[3]	......			
Seeding[4]	......	......	......	
Land			......	
Total Fixed Assets				......
Total Assets				$......

Liabilities

Current:			
Accounts Payable		$......	
Notes Payable		......	
Accrued:			
Wages	$......		
Interest	......		
Taxes	......	......	
Total Current Liabilities			$......

[2] Clearing rough, timbered, or otherwise untillable ground is not subject to depreciation since the subsequent tilling of the soil tends to improve rather than depreciate.

[3] Breaking virgin sod is not subject to depreciation for the same reason mentioned in note 2. If for any reason cultivation is discontinued for a number of years depreciation will begin to accrue and should be taken into account.

[4] Ground seeded in perennial crops is subject to depreciation, since it must be invariably reseeded in time; however, ordinarily the process of reseeding is carried on gradually; seed is sowed on spots that become thin, the process continuing from year to year. In such cases the cost may be charged as a current expense in the same manner that repairs to a building would be charged to expense. If the crop is one that must invariably, in time, be entirely plowed up and reseeded, it should be placed among the depreciable assets and depreciated accordingly.

Fixed:				
Contracts for Purchase of State Lands		$......		
Bonds (due January 1, 19—):				
Authorized	$......			
Unissued	......			
Outstanding		......		
Total Fixed Liabilities			......	
Total Liabilities				$......

Capital

Capital Stock:				
Authorized		$......		
Unissued	$......			
Treasury	......	......		
Outstanding			$......	
Surplus:				
Beginning of year	$......			
Adjustments	......			
Actual		$......		
Profits for the year		......		
End of year			......	
Total Capital				$......
Total Liabilities and Capital				$......

MEADOW GROVE LAND AND LIVE STOCK COMPANY

PROFIT AND LOSS

March 31, 1921

Operation

Gross Profits:			
Produce:			
Grain:			
Wheat		$......	
Oats		......	
Rye		......	
Barley		......	$......

Hay:			
Timothy and Clover	$......		
Alfalfa	......		
Wild	......	......	
Vegetables:			
Potatoes	$......		
Turnips	......		
Beans	......		
Sugar Beets	......	......	$......
Live Stock:			
Cattle		$......	
Sheep		......	
Hogs		......	
Ducks		......	
Turkeys		......	......
Miscellaneous:			
Pasturage		$......	
Horse Hire		......	......
Total Gross Profit from Operation			$......
General Farm Expenses:			
Depreciation on Telephone lines		$......	
Depreciation on General Equipment		......	
Telephone		......	
Taxes—General		......	
Unallocated Expense		......	
Total General Farm Expenses			......
Net Profit from Operation			$......

Administration

Expenses:			
Office Expense		$......	
Auditing		......	
Federal Taxes		......	
Interest Paid	$......		
Interest Received	......	......	
Total Administration Expense			$......
Net Profit			$......

Miscellaneous

Income:			
Profit on Investments..............	$......		
Profit on Sale of Land..............	......		
Total Miscellaneous Income..........		$......	
Expenses:			
Expenses on Investment Property............		......	
Net Miscellaneous Income..................			$......
Net Income..			$......

Meadow Grove Land and Live Stock Company

Analysis of Produce Accounts

Year Ended March 31, 1921

Grain	Bushels of Grain and Vegetables, Tons of Hay	at	Value
Wheat:			
Inventory beginning of year............	...	$..	$......
Produced..........................	...	..	......
Purchased.........................	...	..	......
Total..........................	...	$..	$......
Sold..............................	...	..	
Consumed..........................	...	..	......
Unaccounted for.....................	...	..	......
Inventory end of year................	...	..	......
Total..........................	...	$..	$......
Gross Profit per Profit and Loss Statement...........			......

(All grain, hay, and vegetable accounts are analyzed in the same manner.)

Note: The quantity column should always balance, but the value column will show a difference represented by the profit or loss on the crop.

Meadow Grove Land and Live Stock Company
Analysis of Live Stock Accounts
Year Ended March 31, 1921

Cattle	Number of Head	Average per Head	Value
Inventory beginning of year..........	....	$...	$......
Purchased..........................	....	...	......
Expenses...........................			......
Increase (number born).............	....		
Total....................	....	$...	$......
Sold...............................	....	$...	$......
Butchered..........................	....	...	......
Died...............................	....		
Inventory end of year..............	....	...	......
Total....................	....	$...	$......
Gross profit per Profit and Loss Statement...........			$......

Sheep

(Sheep and all other live stock accounts will be analyzed in the same manner.)

Meadow Grove Land and Live Stock Company
Comparative Statistics

	Year Ended March 31			
Wheat:	1921	1920	1919	1918
Acres..............................	....	....	....	....
Yield in bushels...................	....	....	....	....
Yield per acre in bushels..........	....	....	....	....
Average yield in state per government statistics.........	....	....	....	....
Cost of production (expenses)...........	$....	$....	$....	$....
Cost of production per bushel..........	....	....	....	....
Average selling price per bushel..........	....	....	....	....
Average selling price of yield of one acre...	....	....	....	....
Cost of yield of one acre................	....	....	....	....
Gross profit on one acre................	....	....	....	....

	Year Ended March 31			
	1921	1920	1919	1918
Oats:				
(The same statistics will be used for all grains and vegetables and also for hays, using tons instead of bushels in the case of hays and sometimes in the case of vegetables where raised in large quantities.)				
Pasturage:				
Income..............................	....	....	....	....
Expenses.............................	....	....	....	....
Net income...........................	....	....	....	....
Average number of head pastured.........	....	....	....	....
Net income per head pastured............	....	....	....	....
Horses:				
Work horses owned end of year...........	....	....	....	....
Work horses owned (average during year)..	....	....	....	....
Horse-days worked.....................	....	....	....	....
Potential horse-days..................	....	....	....	....
Horse-days idle.......................	....	....	....	....
Average days each horse worked..........	....	....	....	....
Percentage utilized....................	....	....	....	....
Horse expense.........................	$....	$....	$....	$....
Cost per horse........................	....	....	....	....
Cost per horse per day..................	....	....	....	....
Cost per horse-day worked..............	....	....	....	....
Boarding Men:				
Number of man-days worked.............	....	....	....	....
Cost of boarding men (total house expense)	$....	$....	$....	$....
Cost of board per man-day worked........	....	....	....	....
Irrigating:				
Acres irrigated........................	....	....	....	....
Cost of irrigation......................	$....	$....	$....	$....
Cost per acre.........................	....	....	....	....
Acreage:				
(List different crops, pastures, unused ground, etc., and acreage devoted to each.)				

Meadow Grove Land and Live Stock Company
Comparative Analysis of Cost of Production
Grain

	Year Ended March 31					
	1921		1920		1919	
	Per Bu. (Yield ....Bu.)	Amount	Per Bu. (Yield ....Bu.)	Amount	Per Bu. (Yield ....Bu.)	Amount
Wheat:						
Seed............	$.....	$......	$.....	$......	$.....	$......
Labor..........	.....	......	.....	......	.....	......
Board of men....	.....	......	.....	......	.....	......
Manager.........	.....	......	.....	......	.....	......
Horses..........	.....	......	.....	......	.....	......
Irrigating........	.....	......	.....	......	.....	......
Sacks............	.....	......	.....	......	.....	......
Interest on investment..........	.....	......	.....	......	.....	......
General..........	.....	......	.....	......	.....	......
Total per analysis of produce accounts.....	$.....	$......	$.....	$......	$.....	$......

A like analysis will be made for each grain and hay account.

Note: A similar analysis may be made of various expense accounts including live stock and house expense. In the case of live stock no satisfactory unit rate can be established since an average cost per head including all ages would be of little value. House expenses may be resolved to a unit rate per man-day.

Meadow Grove Land and Live Stock Company

Analysis of Horse-Days Worked

Statement Showing to What Extent Work Horses Were Used

The figures at the top of the columns indicate the number of horses used, while the figures in the columns indicate the number of days the respective numbers of horses were used.

Month	Total Days in Month	0	1	2	3	4	5	6	7	8	9	10	11	Total Horse-Days Worked	Total Potential Horse-Days	Total Horse-Days Idle	Cost of Keeping Horses Not Worked
1920																	
Apr.	30																$
May	31																
June	30																
July	31																
Aug.	31																
Sept.	30																
Oct.	31																
Nov.	30																
Dec.	31																
1921																	
Jan.	31																
Feb.	28																
Mar.	31																
Total	365																$

Note: The above outline is for a case where 11 work horses are owned; if more or less are owned, the columns should be increased or lessened to correspond. The aggregate of the amounts extended into the several columns must always agree with the total days in the month.

CHAPTER VIII

ACCOUNTING FOR MALLEABLE IRON INDUSTRY

By Nina M. Miller

I. Manufacturing Processes and Departmentization

Development of the Iron Industry

Iron, the strongest and most useful of all heavy metals, is found in great abundance in many parts of the earth. Its field of utility widens with the progress of invention and our growing industrial needs, so that, at the present time, such a variety of qualities of iron are manufactured that it can rightfully be considered the foundation of modern economic development.

Before iron was melted to a liquid state by the modern method of the cupola and air blast, fire was applied directly to the iron ore until it became heated to a sticky consistency, after which the molten metal was extracted from the fire in large balls or masses and pounded to remove the slag or impurities. This molten mass was then ready to be rolled or shaped as desired. This is what is called "wrought" iron. It is pliable and is usually made into round or bar iron, iron sheets, iron pipe, etc.

The invention of the cupola, a high iron stack in which layers of iron, charcoal, coke, or coal are burned together, enabled the modern founder to draw off the molten liquid from a spout at the bottom of the cupola after the floating waste, or "slag," as it is called, has been run off from another spout higher up. The molten liquid is poured into molds formed of sand, and of the desired shapes. The cooled iron is known as "cast" or "grey" iron. The castings are ready for use in their rough state as soon as they are cold and the sand has been cleaned from the surfaces. Grey iron is used to make heavy castings where strength and rigid-

ity are needed, as, for instance, car wheels, heavy machine parts, etc., or for lighter castings where rigidity is the principal requirement. Where lightness and pliability are the desired qualities, malleable iron will best serve the purpose.

Malleable iron is cast iron which has been made pliable by being slowly reheated in an annealing oven, the temperature of which is gradually increased to a point below fusion, and is then as gradually decreased. The degree of malleability is regulated by the rapidity of the cooling process. Although malleable iron may be made from cupola cast iron of correct chemical analysis it is far cheaper and more certain of results to melt it in open hearth or air blast furnaces, as is the most used method today. Between 1860 and 1870 the invention and perfection of what is known as the "Bessemer" process made it possible to raise the temperature of the molten metal above the melting point of steel, thus freeing it from its many impurities by fusion rather than by skimming them off in the shape of slag, as is necessary by the cupola process.

Malleable iron differs from wrought iron in that it is free from slag, and differs from cast iron in that it is springy and bends under a strain without breaking. Therefore it is especially useful for light machine parts, agricultural implement castings, automobile castings, small car castings, and light hardware, where light weight and toughness are required and malleability is essential in order to withstand the sudden shocks incident to hard usage. Since malleable metal can be cast in intricate shapes, it often replaces castings formerly made of steel. The hardness or softness can be regulated by the suddenness with which the castings are cooled after being reheated in the annealing ovens. Certain standard shapes of malleable iron castings, such as wrenches, plumbing supplies, clevises, tank lugs, etc., listed in every hardware catalogue, are often made up between seasons in order to keep the foundrymen busy when regular contract orders fail.

Contracts for malleable iron castings are usually entered into for a season's requirements of a certain number of tons between

minimum and maximum limits, as, for instance, "not less than 200 tons, not more than 250 tons" at a definite price per ton. This is to protect both purchaser and seller against market changes. The kind and character of the patterns to be furnished by the customer are carefully specified, and it is understood, unless otherwise stated, that not less than a hundred molds of each pattern will be ordered at one time. This is very important, since heavier or lighter castings, castings with cores or without, would have an important bearing on the cost of manufacturing and on the profit or loss sustained on the contract. Time of delivery is also an important item. For this reason it is very desirable to book orders for industries which have different manufacturing seasons, or for appliances which are manufactured during twelve months of the year. Under such conditions skilled workmen can be kept permanently employed on profitable work. July 1, when midsummer heat saps the energy of workmen. is the end of the fiscal and usually the contract year.

Departments of Manufacture

For the purpose of affording the student a better insight into the accounting system of a foundry, it is advisable to give a brief survey of the various departments and operations of manufacture. The principal manufacturing departments with their auxiliaries are:

Stores Department for raw materials and supplies
Melting Department
- Blacksmith Shop
- Sprue Mills

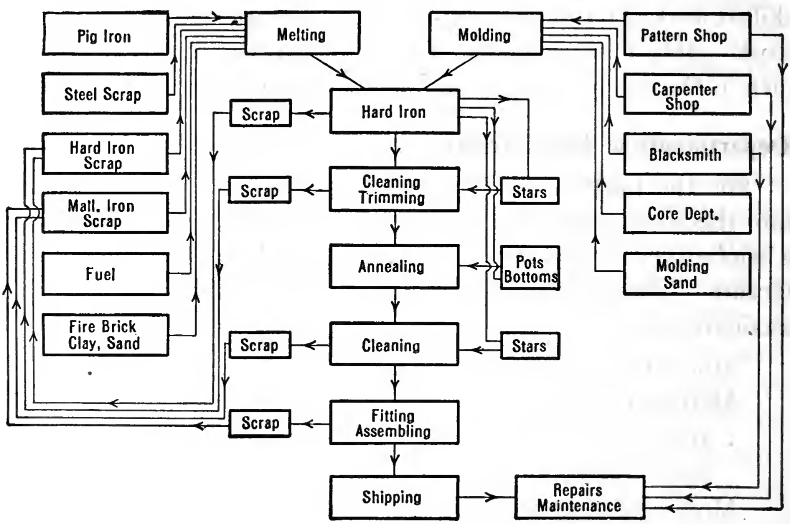
Molding Department
- Core Room
- Pattern Shop
- Carpenter Shop

Hard Iron Department
- Cleaning
- Trimming

Annealing Department
Soft Iron Cleaning
Fitting and Assembling Department
Shipping Department

In smaller foundries the hard iron cleaning and trimming may be combined in one department. Depending on the character of the castings made, the fitting and assembling and shipping departments can often be combined into one department.

The following charts (Forms 1a and b) show the raw material used in the process of manufacture, the relation of one departmental process to another, and the functional organization of the business.



Form 1. (a) Chart Showing Processes of Malleable Iron Manufacture

In the sections immediately to follow, such departmental matters will be discussed as bear upon the accounting problems involved in compiling the costs of manufacture and the financial statements.

- Executive Control and Financial Management
  - Purchasing
    - Stores Control
  - Manufacturing
    - Melting
      - Melting
      - Blacksmith Tools
      - Sprue Cleaning
    - Molding
      - Making Molds
      - Making Patterns
      - Making Cores
      - Flaskmaking
      - Pots and Bottoms
      - Hard Matches
    - Annealing
    - Cleaning
      - Hard Iron
        - Rattling
        - Sand Blast
      - Soft Iron
        - Rattling
        - Sand Blast
    - Inspecting—Sorting
    - Fitting—Assembling
    - Shipping
  - Selling
    - Contracts for Tonnage
  - Recording
    - Financial Accounting
    - Cost Accounting
    - Statistics
  - Repairs and Maintenance
    - Blacksmith Shop Repairs
    - Pattern Shop Repairs
    - Carpenter Shop Repairs

Form 1. (b) Chart Showing Functional Organization of a Malleable Iron Foundry

Raw Materials and Supplies Stores

The bulky raw materials used in a foundry consist of pig iron, steel scrap, and malleable scrap, coal or coke, sand, fire brick, and fire clay; supplies comprise annealing pots, flasks, bottom boards, matches, etc. The use of so many bulky materials makes necessary a large yard space. For the operation of a large foundry it is also necessary to have at least one railway spur or track and preferably two, one each for incoming and outgoing freight. The pig iron is unloaded in piles along the side of the track as near the melting furnace as possible. Each pile is marked with the car number and initials in such a way that wind and weather conditions will not obliterate the numbers. A memorandum is kept of car numbers, their location in the yard, and the chemical analysis of each car-lot as it is received, either from the smelter or the company laboratory.

Everything entering into the manufacture of iron requires chemical analysis. Iron ore, for instance, is never found in a pure state. It absorbs foreign elements or impurities from everything it comes in contact with during the process of conversion into usable iron. These foreign elements have an important effect on the fluidity of the melted iron and also on the quality of the finished product. The coal, especially melting and annealing coal, must have maximum heat units and low sulphur content, and only a certain few soft coals meet these requirements. The molding sand must contain the right proportions of clay and loam, and the core sand must be of proper consistency and proper mixture to make cores tough enough not to break when the iron is poured into the molds, but brittle enough to crumble after the castings have cooled.

To facilitate the handling of raw material, the entire yard space is laid out in imaginary squares numbered like the rulings on a map. Much time is saved in locating material recorded in a stores ledger if this system is followed and it also lessens the temptation to substitute more accessible material. When coal is delivered in cargoes at lake ports or in carload lots, it may be

stored in bins of known capacity for ease in estimating periodical inventories, or a local coal dealer may store the season's supply, and deliver as required directly to the furnace or oven in need of it. Coke, the molding and core sands, and fire clay are usually stored in bins under cover, while the larger supplies, like fire brick, flasks, annealing pots and bottoms, molding and core boards, may be piled in tiers of standard heights and numbers, so that they may be readily counted and checked. Small supplies and tools are kept in a regular stores department in charge of a clerk who keeps accurate records on bin tags of each item received or issued. His carbon copy of goods ordered is returned to the office after he has checked the quantities and has entered them on his bin tags. Issues are handled in the usual way. The issues of raw materials in the yard are authorized by the superintendent and the records are sent to the office for cost accounting purposes.

a	b	c	d	e	f	
						1
						2
						3
						4

Melting Department

Since the invention of the Bessemer process, most malleable iron is melted in rectangular-shaped furnaces built of brick and stone reinforced by heavy steel bars or rails, with a fire box near one end. It is not possible to buy pig iron of uniform chemical analysis, therefore it is necessary to select from the stock on hand iron of stronger or weaker analysis with more or less steel and malleable scrap in order to secure the desired quality of finished iron. The melter receives from the superintendent or his representative, a memorandum of the weights of pig iron of specified car numbers, and the weight of scrap which will be delivered to him for each melt. This melt, consisting of about 8 or 10 tons of metal, is spread out over the bottom of the furnace, heavy iron arches are swung into place, and the spaces between are cemented together. The quick, intense heat generated in the fire box is

forced over the top of this bed of iron by a strong air blast generated with powerful fans. Melting may be considered the most important part of the casting of malleables, for if the mixture is not correctly melted in the first place, perfection in other departments will not overcome this original defect. Properly melted iron will have no cinders or hard spots embedded in it, it will pour easily and will completely fill well-proportioned molds. Years of experience are required to become a good melter.

The excess heat generated for a melt, over and above what is required for actually melting the iron, formerly was wasted by allowing it to pass out into the air through the chimney. Now, by the invention of a certain type of upright tubular boiler, this heat may be converted into steam for power and lighting purposes. Where this is the case the expense of power, heat, and light may be an almost negligible factor of expense.

Molding and Pattern Departments

Molding is the process of making in sand an impression of the finished castings by means of a pattern of the desired shape. Into the technicalities of molding and pattern-making it is unnecessary to enter, as any encyclopedia will furnish the information. The discussion here is limited to a brief description of the terms which find their way into the accounts, or the understanding of which is necessary in computing malleable iron costs.

Molding is done in boxes or flasks, either of iron or wood, reinforced with heavy corners and clasps. Flasks are made in two halves, so constructed that they can be exactly fitted together. A flask is fitted to a bottom board with cleats attached to raise it from the floor. The lower half or "drag," as it is called, is filled with sand and half of the pattern is placed in it. Where many castings of a kind are to be made, a hard "match" of sand and rosin is made to act as a permanent first filler, by this means saving considerable time, as the pattern is always in the same position within the two halves of the flask. The upper half of the flask, called the "cope," is first placed in position on the

lower half and the sand is rammed tightly about the upper half of the pattern, after which the flask is reversed, the hard match is removed, and the sand is rammed about the lower half of the pattern. After this process the pair of flasks is again reversed to their original position and carefully tapped on all sides to loosen the pattern from the sand and pack it tightly around the outside surface. This treatment insures an even, smooth surface on the finished work and also facilitates withdrawal of the pattern from the sand.

A "gate" or hole is next made at one side of the top for pouring in the molten metal, and the upper part of the mold is pricked with wire in several places to allow the escape of air and steam. The flask is then parted along the line of juncture, the pattern is carefully removed, all imperfections are smoothed out with hand tools, all parts are dusted with fine sand. If hollow shapes are required, suitable cores are fixed in prepared positions, the flask halves are put together again, and the mold is ready for the pouring of the hot metal.

After the molten metal has been poured and cooled, good castings are removed to the cleaning department, while the defective or broken castings together with the gates runners, etc., broken from the molds are sent to the sprue mills to be cleaned of sand and are then returned to the furnace or stock for remelting. Here the molding cost ends and that of hard iron cleaning begins.

The molder is paid for all perfect castings, even though they are broken in handling, but he is not paid for misrun castings caused by careless pouring. If the mixture, by reason of improper analysis or poor melting practice, cannot be poured properly into the prepared molds, he is paid for his work of molding and the foundry suffers the loss due to so-called "misrun" castings. The difference between the weight of metal put into the melting furnace, and the weight of good castings plus waste material returned to furnace, is the melting loss.

The pattern and core departments as well as the carpenter shop are principally auxiliaries of the molding department, just

as the blacksmith shop prepares poker bars, etc., for the melting department in addition to doing the blacksmith repairs work for the entire foundry. The core department furnishes the forms by means of which castings may be made hollow. The labor expenses of these various departments are distributed on time slips prepared under the supervision of a foundry clerk whose entire time is spent in the foundry keeping records of the time of all the employees, as well as performing other miscellaneous clerical work for the foreman or superintendent. Since the pattern department makes patterns chargeable to customers, as well as for foundry use, the cost of its operation is counter-balanced by the sales of patterns to customers, and the department is therefore nearly if not entirely self-supporting.

Malleables are usually made from patterns furnished by customers, or if a master pattern is furnished, the foundry may make up "gates" of patterns, charging them to the customer, because they remain his property and are useful only for his own make of machine. There may be an agreement by which the cost of patterns is remitted after a certain tonnage of each pattern has been made; or again, the foundry may make additional gates from customers' patterns for its own convenience in turning out orders promptly. Usually the patterns are the property of the customer, and he has the privilege of calling for their return whenever an order is completed.

Cleaning, Annealing, and Assembling

The hard iron castings are delivered from the molding floors to the cleaning room, where the sand is removed in revolving barrels called "rattling mills" or by the sand blast process. The remaining gate ends are then chipped off, they are counted and inspected for imperfections, and the molder's personal record of castings poured is corrected to correspond with good castings sent to the annealing department. The difference between the castings made and reported by the molder and the weight of good castings transferred to the annealing department, is the molding loss. Care-

ful record is kept of losses by individual molders and by patterns in order to locate trouble and check undue expenses of operation.

To protect them from harmful gases, the hard iron castings, after delivery to the annealing department, are packed in iron annealing pots which are open top and bottom but are set on separate "bottoms" when in use and are placed in tiers in the ovens. Here they are subjected to a white heat for a period of from two to three days, after which they are gradually cooled off. This changes the brittle white iron into a soft, grayish, pliable malleable which will bend under the hammer almost double without breaking, and is thus adapted to the sudden hard shocks incident to service as parts of machinery. The scientific heat treatment determines the eventual value and the tensile strength of the malleable iron as well as its softness and toughness.

When castings are unpacked from the annealing ovens, they are covered with scale, cinders, and oxide from the burning heat. After these have been removed from the surface in rattling mills or by sand blast process they are inspected, sorted, and counted. If the contract calls for any finishing work it may be necessary to grind off fins, straighten castings under a hammer or die, and punch or ream them. Otherwise they are ready for the packing and shipping processes. Rigid inspection in the shipping department saves much more than the cost of the labor involved. The buyer may return an entire lot of castings and refuse to send more orders, if he should find a quantity of hard castings or badly warped castings in a large lot.

II. Accounting and Cost-Finding

Standardized Costs

A knowledge of malleable iron costs is essential to intelligent marketing in competition with other foundries in the same territory. Cutting of prices is safe only for the manufacturer who knows what volume of output combined with the most efficient production methods, will enable him to lower the normal price of

castings on some particular pattern. For purposes of control it is necessary to compute the cost per ton of castings made during the fiscal period. But where light and heavy castings are poured side by side the average cost per ton for a monthly period is no indication of the actual cost of the two kinds of castings. Heavy castings without cores can be produced by molding machines and unskilled labor with small losses and little supervision, while the lighter castings made by hand may be subjected to heavy losses in melting and molding, costing more to clean and anneal and needing much more supervision in all departments.

An average cost per ton equalizes all these differences. To estimate prices accurately, separate job costs must be obtainable. For this reason the National Malleable Castings Association, following the tendency of all industries and trades to associate for mutual protection. has attempted to establish a standard system of accounting for malleable foundries. This system, while simple enough for the needs of smaller foundries, is capable of being expanded for use in larger foundries without changing the principles involved. Research departments have been established to compile information from all sources and to present the results in suitable form. A member of the association can thus compare his percentages of costs by departments or processes with the standard averages and with the high and low averages of various foundries making the same class of work. Unusual differences call attention to weaknesses which might otherwise be overlooked. Such associations aim to improve and standardize manufacturing processes and conditions, to equalize prices with costs of production, and to prevent large users of malleables from making raids on the legitimate trade by placing large tonnage orders for intricate or difficult work with smaller founders who are ignorant of the cost of producing such work.

Standard Accounting Classifications

According to the recommendations of the cost accountant of the National Malleable Castings Association, Robert E. Belt,

the important considerations in establishing an account classification are

1. Arrangement of cost accounts by departments.
2. Proper division and handling of direct and indirect costs.
3. Separate overhead rate for each department and correct method of arriving at the distribution.

The departmental cost accounts and the charges thereto are as follows:

Stores. Charged with all costs of material at invoice prices plus freight and unloading charges.

Melting. Charged with all costs of delivering materials from the yard or stores to the furnaces, and the process of melting up to the time the furnace is tapped and the melted iron is delivered to molders' ladles.

Molding. Charged, in addition to the actual direct molding charges, with all costs from the time the molten metal is delivered to the ladles, to the time the hard iron castings are delivered to the cleaning department. This includes expenses of patterns and cores made for foundry use.

Hard Iron. Cleaning includes all costs of cleaning sand from castings as delivered from the foundry. Trimming includes all costs of chipping off gates and fins, sorting, counting, and weighing hard iron castings, as well as costs of delivering them to the annealing department.

Annealing. Charged with all costs of packing castings, loading them in annealing ovens, unloading after the heats, and delivering them to the soft iron department.

Soft Iron. Charged with all costs of cleaning castings of scale and delivering them to the fitting and assembling department.

Fitting and Assembling. Charged with all costs connected with inspecting, sorting, fitting, and delivering castings to the shipping department.

Shipping. Charged with all costs of packing, marking, and shipping castings.

Sources of Charges

The direct labor charges to the above accounts are made from the pay-roll distribution sheets, and the indirect labor both from the pay-roll distribution sheets and from the reports made on individual labor slips. The labor charges to the blacksmith, pattern, carpenter, and repairs, and maintenance accounts are made from the individual labor slips illustrated in Form 2.

SHOP COST SLIPS
Daily Record of Work Performed

Name of Workman__________ Order No.______
Date______

Nature of Work	Number Made	Materials Used			Labor		Department Charge
		Kind	Quantity	Cost	Hours	Cost	

Correct

Foreman

Form 2. Individual Labor Slip

To be used for blacksmith, pattern, and carpenter shops and for miscellaneous labor

The charges for material, supplies, and small tools furnished to various departments of the foundry, are taken from properly authorized and receipted requisitions sent in through the stores department or yard department.

The fixed plant charges for power, heat, and light are distributed in proportion to the benefits received. In foundries where the excess furnace heat generates all the power required for operating, heating, and lighting the plant, this charge may be merely nominal for upkeep and depreciation. Where this is not the case, power may be distributed on the basis of horse-power consumed, heat may be figured on the basis of floor space

occupied, and light on the hours of consumption or on the hours and watts of light used in each department.

Depreciation, taxes, and insurance of buildings may be allocated on the basis of departmental space occupied, while for machinery and equipment the value of these assets in the several departments is the basis used.

Income tax is not permitted by the government to be charged to the cost of operation.

Other fixed charges which cannot be definitely allocated may be distributed on the basis of the average departmental pay-roll, or on the direct molding labor, if that is a fair method of distribution for the particular industry, or by any other method which seems equitable and is sanctioned by good accounting procedure.

For the purpose of further illustrating the classification of items received for the monthly cost summaries through the various sources mentioned above, the detailed classification of labor and material items as recommended by Robert E. Belt is given below:

Detailed Classification of Labor and Material for Cost Accounts of Large Malleable Iron Foundries

Metal	Pig Iron	
	Malleable Scrap	
	Steel Scrap	
	Home Scrap	
Melting Department	Indirect Labor	Firemen
		Slagmen (taking out slag and cleaning ashpits)
		Skimming
		General Overhauling
		Coal Men
		Charging
		Making up Heats
		Operating Slag Mill
		Supervision (foremen and assistants)
	Fuel	Coal
		Fuel Oil
		Gas
	Supplies and Tools	
	Repair Labor	
	Repair Materials	
	Overhead Plant Charges	
	Laboratory Expense	Labor
		Materials and Expense

- Molding Department
  - Direct Labor
    - Bench Molding
    - Floor Molding
    - Machine Molding
  - Indirect Labor
    - Gate-Breakers (cleaning up gangways and floors and delivering castings to the hard iron cleaning department)
    - Flask, Board, and Chill Men
    - Sand-Cutters
    - Ladle-Liners
    - Hauling Molding Sand to Molders' Floors
    - Shifting
    - Iron-Carriers
    - Supervision (foremen and assistants)
  - Supplies and Tools
    - Sand
    - Facings
    - Chaplets
    - Oil
    - Molasses
    - Compound
    - Parting
    - Molders' Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
  - Special Pattern and Flask Expense
    - Labor
    - Material
    - Expense
- Core-Making Department
  - Direct Labor
    - Bench Division
    - Machine Division
    - Sand-Mixers
    - Oven-Tenders
    - Wire-Straighteners
    - Inspectors (also pasting)
    - Core-Carriers
    - Supervision (foremen and assistants)
  - Fuel
  - Supplies and Tools
    - Sand
    - Core Oil
    - Compound
    - Wire
    - Rods
    - Miscellaneous Supplies
    - Miscellaneous Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
- Hard Iron Cleaning Department
  - Indirect Labor
    - Tumbling
    - Sand Blasting
    - Cleaning up Department
    - Supervision (foremen and assistants)

- Hard Iron Cleaning Department (*Continued*)
  - Supplies and Tools
    - Stars
    - Sand
    - Miscellaneous Supplies and Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
- Trimming and Inspecting Department
  - Indirect Labor
    - Trimming—Sorting
    - Inspection Counting
    - Cleaning up Department
    - Supervision (foremen and assistants)
    - Clerical Labor
  - Supplies and Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
- Annealing Department
  - Indirect Labor
    - Packing
    - Shaking Out and Delivering to Soft Iron Cleaning Department
    - Emptying and Filling Ovens
    - Building Up and Taking Down Doors
    - Oven Firemen
    - Coal and Ash Men
    - Other Miscellaneous Labor
    - Supervision (foremen and assistants)
    - Clerical
  - Fuel
    - Coal
    - Fuel Oil
    - Gas
  - Pots and Bottoms
  - Supplies and Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
- Soft Iron Cleaning Department
  - Indirect Labor
    - Tumbling
    - Sand Blasting
    - Cleaning up Department
    - Supervision (foremen and assistants)
  - Supplies and Tools
    - Stars
    - Sand
    - Miscellaneous Supplies and Tools
  - Repair Labor
  - Repair Materials
  - Overhead Plant Charges
- Finishing and Shipping Department
  - Direct Finishing Labor
    - Chipping
    - Grinding
    - Straightening
    - Punching and Reaming

Finishing and Shipping Department (*Continued*)	Indirect Finishing and Shipping Labor	Sorting Loading Inspecting Packing Supervision (foremen and assistants) Clerical
	Supplies and Tools	Finishing Supplies and Tools Packing Materials and Supplies
	Repair Labor	
	Repair Materials	
	Overhead Plant Charges	
General Expense	Officers' Salaries Office Salaries Office Expense Selling Expense Miscellaneous General Expense	
Returns and Allowances		
Pattern Shop	Direct Labor (charge account) Indirect Labor Materials, Supplies, and Tools Repair Labor Repair Materials Overhead Charges	
Carpenter Shop	Direct Labor Indirect Labor Materials, Supplies, and Tools Repair Labor Repair Materials Overhead Charges	
Blacksmith Shop	Direct Labor Indirect Labor Fuel Materials, Supplies, and Tools Repair Labor Repair Materials Overhead Charges	
Overhead Plant Charges—Power, Heat, Light	Labor Fuel Supplies Repair Labor Repair Materials Heating System Electrical System Fire Insurance Property Taxes Depreciation Medical and Hospital Liability Insurance Superintendent, General Foreman, and Miscellaneous Yard Labor Miscellaneous Plant Expense	

In some smaller malleable foundries it may be possible to combine into one department the operation of hard iron cleaning and trimming. Depending on the class of work which is customarily handled by a particular foundry it may be desirable to separate the shipping from the finishing. This would be true if more than the average amount of finishing work is required on the rough castings as they come through from the annealing department, or if the departments are in different rooms or buildings.

Methods of Cost-Finding—Tonnage Costs

In computing foundry costs there are three possible methods, namely tonnage costs, job order costs, and class costs. Under

SUMMARY—MONTHLY COST PER TON GOOD CASTINGS PRODUCED

	Total	Per 100#	
Metal	$18,071.13	$1.64	
Melting Cost	5,287.00	.48	
Molding Cost	16,436.80	1.50	
Cores	2,199.50	.20	
Hard Iron: Cleaning and Trimming	2,148.90	.195	
Annealing	6,545.60	.595	
Soft Iron: Cleaning	1,112.45	.101	
Fitting and Assembling	999.90	.09	
Shipping	1,619.00	.147	
General Administrative Expense	3,643.40	.33	
	$58,063.68	$5.278	
Tons of good castings made		550	
Average cost per ton of good castings made			$105.57
Sales of malleable castings for month		$70,462.88	
Tons of good castings sold		460	
Average selling price per ton			153.18
Rough estimate of operating profit per ton of castings sold			$ 47.61

Form 3. Monthly Cost Summary

the first method, the total costs for the period are divided into the production for the period, figured in tons, and from this figure is computed the average per hundred pounds of castings or malleables made. It is apparent that such blanket figures as these would be of value only in a foundry producing the same type of work and using the same patterns day after day. Such conditions are occasionally encountered where malleables are being manufactured for stock, and under these circumstances monthly tonnage figures cover all purposes of control. When the monthly estimated statement of costs is compared with sales per ton, as shown in Form 3, the record serves the further purpose of showing trends.

A more accurate estimate necessitates inventories of malleables and may be made as follows:

	Tons	Per Ton	Amount
Estimated at beginning of month......	175	$ 80.00	$14,000.00
Good castings made..................	550	105.57	58,063.68
	725		$72,063.68
Estimated on hand at end of month....	265	$ 85.00	22,525.00
Average cost of castings sold..........	460		$49,538.68
Average per ton cost of castings sold........................			107.69
Average selling price, as above........................			153.18
Estimated profit per ton sold........................			$ 45.49

The value of malleables on hand required for this more accurate estimate usually represents the value of malleables in process unless some large order is being held for shipping instructions.

The estimated price depends on whether the greater proportion of these are in the hard iron state at the end of the month or whether more weight of unfinished material has accumulated

near the fitting and assembling end of the process. In other words, how much cost has accumulated?

Job Costs

In a foundry making castings of every shape and size, as most foundries do, the only accurate method of cost-finding is that of figuring costs on individual patterns, or by costs of jobs or contracts, where contracts are made at a flat price for all requirements, that is, for heavy and light castings, plain and intricate shapes. In figuring such costs, the usual mechanism of production order cost-finding is required, such as job orders and cost sheets bearing the same number and numbered consecutively, to which all costs are charged: time tickets as previously described, charging molding, annealing, cleaning time, etc., to each job order; requisitions for any special supplies used on the order; and an equitable method of distributing the foundry overhead over individual patterns or contracts for mixed work—a matter to be discussed at length later.

The method employed for computing raw material costs for a foundry differs from that for a manufacturing plant. The raw material of castings consists of the iron ore, coal, scrap metal, etc., used in the melt. To figure the material costs, it is necessary to apportion the whole cost of the melt over the castings on the basis of weight. In the majority of foundries the common practice is to throw together the cost of the melt, that is, the cost of raw material used, and the labor cost of melting. While this grouping of costs makes for simplicity in the use of records, it is bad practice from the point of view of operating efficiency and of obtaining accurate costs for each pattern or contract. Castings of intricate design and light weight require much greater care in making than much heavier castings of simple design, and therefore the cost of labor and of waste is more for the lighter product. Where accuracy is desired, it is necessary to keep a record of the labor cost applied to the production of each type of casting and to include this charge in the cost of the raw material.

Class Costs

Since the clerical labor involved in recording job costs for each and every pattern or for each contract would usually make the expense of cost-finding prohibitive, a very close approximation may be obtained by adopting a system of classification which will include within its extreme limits all the representative types which come within the scope of its operations. These may be classified and numbered by weight per piece; by number of pieces on a gate; by shape, simple or complex, whether they are plain or cored castings. The more detailed the classification, up to a certain limit naturally, the greater will be its service.

By recording test job costs on these various classifications from time to time to check their accuracy, very close approximations to actual costs will be provided at considerably less expense. It is a great improvement over estimated prices based on the average cost per ton per month, or per year, with guesswork adjustments for the differentiations. Class costs are also valuable for checking up costs and estimated profits on completed contracts of large tonnage from a variety of patterns, or for making up a more accurate summary of monthly costs than can be obtained by the straight average price per ton method.

If such a system is planned according to the general principles of job cost accounting, job costs on special orders or special patterns may be obtained with little extra expense when they are needed. In applying classification costs for price-quoting purposes, melting and molding cost and special pattern expenses must be checked against market and labor conditions prevailing at the time, since prices of metals fluctuate with the market conditions and the direct molding labor costs differ even within the same class of castings. All other costs, however, may be transformed into ratios above or below the average cost per ton for the past fiscal period, which would simplify still further the work of estimating prices for new work.

A convenient classification for the purpose of determining class costs is as follows:

Weight per Piece	Weight per Mold	Shape	Cores	
Class A (less than one pound)	A–1 (heavy)	A–11 (simple)	A–111	(plain)
			A–112	(complex)
		A–12 (complex)	A–121	(plain)
			A–122	(complex)
	A–2 (medium)	A–21 (simple)	A–211–212	
		A–22 (complex)	A–221–222	
	A–3 (light)	A–31 (simple)	A–311–312	
		A–32 (complex)	A–321–322	
B				
C				

Class A-11 would be of weight class A, large mold (many pieces on a gate), simple shape, no cores.

Distribution of Overhead Expenses

Overhead expense may be distributed over the product according to one of two methods. The conditions and the degree of accuracy desired are the determining factors.

1. General factory overhead may first be distributed to the various departments and then allocated to the product as a departmental charge. The customary bases are used for this distribution. Thus, rent is distributed on a floor-space-occupied basis, insurance on a value basis, etc. Whatever departmental expense can be allocated directly to job or class costs is so handled. For the allocation to the product of the departmental indirect expense and the general factory overhead, after the amount for the year or the month has been estimated, three bases or some combination of them, are employed, viz., tonnage, direct-labor cost, and direct-labor (or machine) hours. A basis satisfactory in one department may prove wholly unsatisfactory in another. In the system recommended by the national association, all metal and melting overhead, as well as hard and soft iron cleaning,

annealing, and loss on malleables returned, are distributed on the tonnage basis. Molding overhead, trimming and inspection, fitting and assembling, shipping, and general expense are figured as a percentage of direct-labor cost and distributed accordingly. This is not an absolute rule but should be modified to fit conditions peculiar to a given foundry.

2. Under the second method no attempt is made to departmentize overhead expenses. These are recorded in a suitable general expense account and distributed to the product in one item for the entire factory. From a clerical standpoint this is much simpler, but, naturally, does not as truly reflect actual cost conditions particularly as between simple and complex types of product. Tonnage is the only feasible basis here, and, excepting in a small foundry turning out a fairly uniform type of product, the results obtained are not usually satisfactory.

Estimates and Quotations

When bidding on new work it becomes necessary to make estimates. Unless careful and accurate records of costs have been kept, particularly as regards overhead expense, submitting quotations becomes largely a matter of guesswork. For the purpose of estimating costs, use of a tonnage basis exclusively is never reliable. Estimate of metal costs should always be on the basis of current market quotations; direct-labor costs should be estimated only after the pattern, sample, or drawing has been submitted to the superintendent, as molding and core-making direct-labor costs depend largely on the particular product and cannot with accuracy be put on a tonnage basis; the overhead rates to be applied in each department should be carefully examined in connection with this particular piece of work. Only in this way can satisfactory quotations be made. After an estimate has been made, the record of it should be preserved and carefully checked against actual costs when the work is done.

For purposes of illustrating the wide variations from average costs which may occur in castings of the same weight having the

			Molding								Patterns	Cores			Finishing	
Pattern Sample Drawing	Pattern Number	Class Number	Pieces Required	Weight per Piece	Pieces per Mold	Weight per Mold with Gate and Sprue	Total Weight Casting	Total Weight Molten Metal	Price per 100 Molds	Direct Labor Charge	Special Pattern & Flask Expense	No. Cores per Mold	Price per 100 Pieces	Direct Labor Charge	Special Finishing Cost per 100 Pieces	Direct Labor Charge
Pattern	C-1	A-11	4,000	2	4	11	8,000	11,000	6 00	60 00						
Sample	45	A-121	4,000	2	4	11	8,000	11,000	7 68	76 80	15 00	4	30	12 00		
Drawing	116	A-122	4,000	2	4	12	8,000	12,000	11 84	118 40	25 00	8	60	48 00	25	10 00

Form 4. Data for Estimated Costs

Adapted from Belt, R. E., "Foundry Cost Accounting"

same number of pieces on a gate, three simple examples are added. The special data on which the cost estimates in these examples are based are given in Form 4, which is used for this purpose. This information, together with that as to average costs given by Form 3, is used in the three estimates given below, one of which is for castings to be made according to a pattern submitted, another according to a sample, and the third according to a drawing. As mentioned above, these estimates are preserved for comparison with actual costs if the contract is secured.

Cost Summary Pattern C-1 (Class A-11)

Metal 8,000 lbs. @ $1.64		$131.20	
Melting Loss. 10%		13.12	$144.32
Melting 11,000 lbs. @ .48		$ 52.80	
Loss Bad Castings, 10%		5.28	58.08
Molding Direct Labor			60.00
Molding Overhead, 120%			72.00
Other Costs (See p. 293):	$.195		
	.595		
	.101		
	.09		
	.147		
	.33	$1.458 × 80.00	116.64
		80.00)	$451.04
			$ 5.638 per 100 lbs.

Cost Summary Pattern 45 (Class A-121)

Metal 8,000 lbs. @ $1.64	$131.20	
Melting Loss, 10%	13.12	$144.32
Melting 11,000 lbs. @ $.48	$ 52.80	
Loss Bad Castings, 10%	5.28	58.08
Molding Direct Labor		76.80
Molding Overhead, 120%		92.16
Cores Direct Labor		12.00
Cores Overhead, 150%		18.00
Special Pattern and Flask Expense		15.00
Other Costs, as above		116.64
	80.00)	$533.00
		$6.663 per 100 lbs.

Cost Summary Pattern 116 (Class A-122)

Metal 8,000 lbs. @ $1.64	$131.20	
Melting Loss, 10%	13.12	$144.32
Melting 12,000 lbs. @ $.48	$ 57.60	
Loss Bad Castings, 10%	5.76	63.36
Molding Direct Labor		118.40
Molding Overhead, 120%		142.08
Core Cost Direct Labor		48.00
Core Overhead, 150%		72.00
Special Pattern and Flask Expense		25.00
Finishing Labor		10.00
Other Costs* (See p. 300) $1.368 × 80.00		109.44
	80.00)	$732.60
		$9.158 per 100 lbs.

* The fitting and assembling cost of $.09 per 100# is omitted from the figure of "other costs" ($1.458) used on page 300 since this cost is here included in the item, finishing labor ($10).

Comments on Estimates

The metal price per 100 pounds of good finished castings produced, is taken from Form 3, the estimated monthly cost summary (page 293).

The melting loss of 10% is the estimated loss for a fiscal period taken from reports sent in on Form 8 (page 311), or from class costs obtained for this particular kind of casting.

Loss of bad castings in process is the estimated loss obtained from records sent in on Form 10 (page 313) during a fiscal period, or from established records of class costs.

Molding overhead is the ratio of all indirect labor and other costs of molding to the direct-labor cost of molding. This is obtained either from a summarization of monthly costs into annual costs, or from established records for this particular class of work.

Cores overhead is obtained by the same process as molding.

Finishing labor is usually included in the general or other costs, except in cases where some special or unusual finishing process is specified in the contract. Such costs would naturally not be included in any general averages or even in class averages.

Other costs, in these specific examples, comprise all other

items not included in the detailed costs already mentioned. For purpose of simplicity in figuring, they are here given as an average cost per ton of good finished castings, obtained either from estimated annual averages or from established class averages. Present figures are taken from Form 3.

Pattern and flask expense, unless otherwise agreed, is always charged to the customer where the patterns remain his property.

Accounting for Stores

For the purpose of figuring job costs a separate subsidiary ledger is kept for recording the receipts and disbursements of materials, supplies, and small tools. This ledger is controlled by an account in the general ledger. Monthly verifications are made systematically of part of the record, and at the end of the fiscal period a physical inventory is taken only of the items which represent large investments of capital and which, if incorrectly recorded, would seriously affect the annual reports.

The heavy raw materials, as explained previously, are stored in a yard under protection from the weather or out in the open. If in bins, the bins have standard capacities, and if piled in rows, the rows have a standard number of items in each row for purposes of easy computation. These materials are usually disbursed on orders from the superintendent, while the receipted slips are returned to the office for making proper stores and cost records. The small tools, supplies, and materials are kept in a regular stores department.

The stores requisitions form the basis for apportioning material and supply costs to be charged to the cost of jobs in departments. For pricing requisitions, under one method a particular lot of material is priced out at its actual cost until the supply is exhausted, when the price is changed to conform to the price paid for the next lot received. Pricing the actual cost of small tools, supplies, etc., in this way will make very little difference in costs. If, however, the method is applied to bulky raw materials at a time of fluctuating prices, the cost figures will be confusing and

irregular. It may also be difficult to check up monthly estimates with the annual profit and loss statements. For such materials the better way is to take the general average price of the entire quantity on hand at the time disbursements are made, obtained by dividing the balance of the money value of the two sides of the ledger by the balance of the quantity on hand, thus providing a changing average which will equalize the costs for monthly summaries but cannot be used in figuring prices on new work, if such contracts would necessitate additional purchases at prices above or below this average. For pig iron and other bulky raw materials this average cost of material on hand is the safest price to use. For all items of little value, either cost may be used because results are not affected to any marked degree.

A type stores ledger sheet is shown in Form 5. Sometimes stores records have additional columns for Material Ordered, Material Applied on Orders, and Material on Hand with the usual subdivisions.

Inventories

The stores record represents a perpetual inventory of materials on hand which has been verified in sections throughout the fiscal period. At the close of the fiscal period, however, pig iron and other valuable materials and supplies are inventoried carefully, because errors in these items may seriously affect the profit and loss statement. It is necessary also to have the unused material and supplies in the various departments inventoried. Tools charged to departments during the year are checked up. This work is in charge of the various foremen whose record of count is OK'd by the superintendent. The difficult problem is always that of counting and valuing the product in process. Where the foundry is shut down for repairs during the inventory period and the majority of large contracts have been completed, inventory-taking is a simple matter. Where operation continues uninterruptedly during inventory-taking time, it will be necessary to estimate the weight of castings unfinished in each department in order to get a correct value for unfinished malleables on hand.

In order to do this with any assurance of accuracy it is quite essential that cost records by departments shall have been compiled. Metal and direct-labor costs plus the accrued overhead in the several departments, with adjustment for the degree of uncompleteness in a department, will give the value of malleables in process.

A method used by some foundries for inventorying malleables in process is to hold the inventory record open until the completion of all such malleables, keeping careful record of all costs incurred after the date of inventory. Subtracting these costs from the cost of the finished malleables, figured in the customary way, gives the value of malleables in process at the date of inventory. Under this plan as each department completes its unfinished work, it is closed down for a brief space to prevent confusion with the new work of the next fiscal period.

A method very frequently used includes in one amount finished and process malleables on hand at the close of the period. This is done by subtracting the cost of shipments during the period from the sum of the opening inventory and full cost of production during the period. The cost of shipments is taken at the average cost of the period's production of finished malleables. This rule-of-thumb method must not be used blindly and is open to some objection. It is usually true, however, that there is seldom a large accumulation of stock awaiting shipment.

At inventory time the equipment should be carefully inspected for abnormal depreciation and obsolescence and losses during the period. In addition to this, conservative accounting practice requires certain reserves to be set aside to cover any loss in value of inventories or equipment due to lower trends of price levels.

Construction Work

When construction work of any importance is authorized by the management, the limits of cost should be carefully prescribed and followed. If contracts are let to outsiders all expenses incidental thereto and incurred by reason of the construction, are a legitimate

charge to the cost of the asset acquired. If the construction, however, is done with company workmen, very careful records have to be kept by all departments furnishing either labor or material for the new work. Inaccuracies in accounting for costs of new assets always react on the operating profit and loss for the period.

The account, Additions, Betterments, and Permanent Improvements, accumulates all costs of material purchased directly for new construction, the labor specially employed or diverted from the operating force, and the materials used from stores or departments using materials charged to them for operating purposes. This information is accumulated from the disbursement vouchers, from pay-roll distribution sheets, and from requisitions on the stores department or from special statements of department heads. All time put in by the superintendent and foremen is carefully recorded also. The forms for recording special work of blacksmiths, pattern-makers, carpenters, may be used, or a special blank of a different color or form may be devised for each piece of new construction. The percentage of overhead is estimated and a statement of total cost of construction is made out. This statement, supported by the necessary original records forms the basis of the valuation of the new asset. The amount is credited, through journal entry, to the Additions, Betterments and Permanent Improvements account, and debited to the new asset account. At the end of a fiscal period, the account, Additions, Betterments, etc., represents only the total of expenditures for unfinished assets in process of construction.

Financial Records

Since the general books of account and the method of recording financial transactions do not differ from the practices of good general accounting procedure, it will not be necessary to describe them. Such records differ everywhere with the nature of the work performed and the size of the foundry, or the policy of the management. The balance sheet and statement of profit and loss

to follow indicate the typical accounts required for the financial management of a foundry.

Balance Sheet Items

Assets

Current Assets:		
Cash	$......	
Bills Receivable	......	
Accounts Receivable	......	
Malleables on Hand:		
Finished and in Process	......	
Inventory:		
Unused Tools and Supplies in Departments	......	
Stores:		
Metal on Hand	......	
Material, Tools and Supplies	......	$......
Deferred Items:		
Interest, Taxes, Insurance, Royalties	$......	......
Fixed Assets:		
Land and Buildings	......	
Machinery	......	
Furnaces and Ovens	......	
Patterns	......	
Flasks, Bottom Boards, etc.	......	
Plant Equipment	......	
Stable Equipment	......	
Office Equipment	......	
Additions and Betterments Uncompleted	......	......
Total Assets		$......

Liabilities

Current:		
Notes Payable	$......	
Vouchers Payable	......	
Accrued Wages	......	
Unclaimed Wages	......	$......
Reserves:		
Depreciation Fixed Assets	$......	
Income Tax Payable	......	

Inventory Adjustments	......	
Plant Equipment Adjustments	......	......
Total Liabilities		$......

Net Worth

Capital Stock	$......	
Surplus	......	
Profit and Loss for Period	......	
Total Net Worth		$......

Profit and Loss Statement

Sales for Period		$......	
Deduct:			
Freight on Sales	$......		
Malleables Returned	......	......	
Net Sales			$....
Manufacturing Cost:			
Metal		$......	
Melting		......	
Molding		......	
Cores		......	
Trimming—Hard Iron		......	
Annealing		......	
Cleaning—Soft Iron		......	
Fitting and Assembling		......	
Shipping		......	
Annealing Pots and Bottoms		......	
Fuel		......	
Sand Brick Clay		......	
Grate Bars, etc.		......	
Special Pattern and Flask Expense		......	
Adjustment—Inventory Valuations		......	
Adjustment—Equipment Valuations		......	
Adjustment—Stores Ledger Inventories		......	
Repairs and Maintenance		......	
Miscellaneous Shop Expense		......	
Miscellaneous Freight Charges		......	
Depreciation, Taxes, Insurance		......	
Malleables:			
Initial Inventory	$......		
Final Inventory	......	......	

Administration Expense:			
Salaries		......	
Traveling Expenses		......	
Legal Expenses		......	
Stationery, Printing		......	
Advertising		......	
Telephone and Telegraph		......	
Insurance, Taxes, Depreciation		......	
Miscellaneous General Expense		......	......
Operating Profit			$......
Other Income and Expenses:			
Income:			
Discount on Purchases	$......		
Interest on Investments	......		
Adjustment Fixed Asset Values	......	$......	
Expenses:			
Income Taxes Reserves	$......		
Special Reserves	......		
Special Depreciation	......		
Special Losses	......		
Discount on Sales	......		......
Net Income			$......

III. Statistical and Control Summaries

Superintendent's Individual Car Record

For statistical and control purposes, a number of subsidiary records are kept which need brief discussion. As stated before, since the stores ledger records only quantities and values, the superintendent usually keeps an independent card record (Form 6) of each car of iron, the brand, car number, location in the yard, and chemical analysis. The shipper's analysis is transmitted on the invoice. Where the foundry has a special laboratory of its own, the laboratory analysis may be entered in red ink directly below the shipper's analysis, for purposes of comparison. For convenience and ready reference these cards may be filed by brand or firm name, by date of receipt, by analysis of the silicon,

Material ________ Minimum ________

Unit ________ Maximum ________

RECEIVED					DISBURSED				
Date	Order No.	Quantity	Price	Amount	Date	Req. No.	Quantity	Price	Amount
1/3	15	60,000	25 00	750 00	1/3	34	20,000	25 00	250 00
1/3	23	50,000	25 00	625 00	1/3	54	40,000	24 60	481 20
1/4	36	60,000	24 00	720 00					

Form 5. Stores Ledger

SUPERINTENDENT'S INDIVIDUAL CAR RECORD

RECEIPTS INDIVIDUAL CARS PIG IRON								DISBURSEMENTS			
Date Received 19	Car No. & Initial	Brand Firm	Pile No.	Analysis				Date	Furnace No.	Wt.	
				Sil.	Sul.	Phos.	Mang.				
Mar 3	Penna. 3674		B2	0.82	0.03	0.05	0.12				
				0.86	*0.04*	*0.044*	*0.17*				
REMARKS											

Form 6. Superintendent's Individual Car Record

or in two divisions—full cars and partially used cars—in combination with some other classification. If cards are filed by analysis a signal system will be very useful. White signals may be used where the analysis is normal. Different colors may be selected to show either high or low percentages in each of the four analyses. By this method the superintendent can tell at a glance whether or not he has on hand elements which will neutralize high or low elements of other car-lots, and much time and energy will be saved in selecting the metals for the superintendent's daily melting order.

The receipts side of this form is filled in from the stores record of invoices received, and the disbursements side from the melting order sent out by the superintendent and later signed and returned by the foreman of the melting department. In the use of this form one line of the Analysis column is used for the shipper's analysis while the line beneath shows the analysis made by the chemist at the foundry laboratory and entered on the form in red ink. A new card is used for each car.

Superintendent's Melting Order

From his car records the superintendent makes out a melting order (Form 7). This is the official order for the metal to be loaded into each furnace for the daily melt. After the metal has been delivered to the furnaces, the foreman in charge signs it,

SUPERINTENDENT'S MELTING ORDER

Date	Material	Car No.	Pile No.	Brand or Firm Name	Furnace Number	Weights	
						Estimated	Actual
	Pig Iron						
	Steel						
	Mall. Scrap						
	Hard Iron						

Supt. OK Foreman

Form 7. Superintendent's Melting Order

the exact weight is added opposite the original estimate, and the slip is returned to the superintendent or the stores clerk in order to make the book records on the stores ledger as well as on the card record for individual cars. The information on the slips is summarized at the end of each week or month for the cost records. Slips are filed by months for purposes of checking up errors in estimated melting losses, etc.

Daily Summary of Metals Melted

From the melting orders and the records of the pay-roll and hard iron cleaning departments, a daily summary of metals melted, and loss in melting is made up (Form 8). This is an important control record. From it the work of careless molders,

DAILY SUMMARY OF METALS MELTED

Date........

Metals Charged	Pig Iron	Steel	Mall.	Sprue	Total
Furnace #1 Furnace #2 Furnace #3					
Total					

Scrap Returned....................................		......
Total Weight of Metal Melted......................		......
Weight Good Castings..........................	......	
Weight Annealing Pots and Bottoms...........	......	
Weight Miscellaneous Repairs.................	......	......
Melting Loss......................................		......
Per cent charge.............................	......	
Fuel Used..................................		
Per ton of metal...........................	......	

Form 8. Daily Summary of Metals Melted

poor patterns, and bad melting practice may be detected before expense accumulates and heavy losses are incurred.

Monthly Summary of Unfilled Orders

Another control record is the summary of unfilled orders for purchases and sales (Forms 9 a and b). This record calls attention to the condition of pig iron shipments and the status of current contracts. It is a good index of general conditions of trade.

MONTHLY SUMMARY OF PIG IRON CONTRACTS VS. UNFILLED ORDERS

	Pig Iron	Steel Scrap	Malleable Scrap
On Hand January 1........ Received Month January...			
Used Month January.......			
On Hand February 1....... Unfilled Contracts February 1			

Unfilled Malleable Tonnage (See Form 9b).............. ......

Form 9. (a) Monthly Summary of Pig Iron Contracts vs. Unfilled Orders

Unfilled Tonnage January 1..........................			Tons
Received during Month:			
Large Contracts (specify names).....	......		
Small Orders (totals only)...........	......	......	......
Shipments Month of January.......................			......
Unfilled Tonnage February 1.......................			......

Form 9. (b) Unfilled Orders for Malleable Iron Castings

Summary of Losses in Manufacture

Supplementing this record is another monthly record of the losses during the manufacturing processes. (See Form 10.) During the regular season when volume of output runs somewhat even, there will be little difficulty in checking up on this record, but at times when heavy and light castings are being made at the same time, or when delays occur in any department, the overlapping malleables in process at the end of a cost period may not give accurate records. However, the records for the en-

SUMMARY OF LOSSES IN MANUFACTURE MALLEABLE IRON CASTINGS

		Pounds	Per Cent
Melting Loss:			
Total Metal Charged:			
Pig Iron....................	......		
Steel......................	......		
Scrap.....................	......	......	100
Metal Melted:			
Hard Iron Castings..........	......		
Gates and Sprues............	......		
Misrun Castings.............	......		
Repair Materials............	......	......	
Melting Loss................		......	
Other Losses:			
Hard Iron Castings (customers')	......	......	100
Losses:			
Molding Loss............	......		
Annealing Loss...........	......		
Fitting and Assembling.....	......		
Shipping................	......	......	
Good Finished Castings Produced.......		......	

Form 10. Summary of Losses in Manufacture

tire fiscal period will be a valuable guide to figuring future costs. Unusual or special classes of castings may be followed through the foundry on a job cost basis to ascertain exact losses en route.

Use of Charts

While it is necessary to provide a well-selected system of periodical reports in order to permit the busy executive to keep in mind the many details connected with his own foundry and with general foundry conditions throughout the country, he cannot get from figures alone as clear a perspective of the general and special trends past and present as he can from statistical charts. Some of these may be summaries of wide general trends while others, more detailed, will explain the reasons for the fluctuations in general trends.

Also it is a comparatively simple matter to prove to a board of directors the why and how of progress or retrogression, when they can see a picture of the whole. Directors and stockholders are not as much interested in details as they are in results, that is, the income and increasing value of their investment.

For long-time charts, and for charts carrying details of both high values and very low values, a better visualization of percentage fluctuations is afforded by the use of semilogarithmic paper. Several useful general charts are suggested. Since these are made up from periodical reports compiled in the accounting department, very little additional work is required to keep them up after they have once been planned and started.

1. Operating chart, by months only, continued over a period of years to show:
   (a) Price of pig iron per ton
   (b) Cost of molding per ton
   (c) Cost of cores per ton
   (d) All other costs
   (e) Total cost per ton
   (f) Selling price per ton

Molding costs per ton increase with light or intricate patterns, but decrease with heavy or uncored plain patterns. When molding costs increase more rapidly than general costs, it indicates a more complex line of product, or inefficiency in the molding department. If there has been an increase in core costs as well, this would tend to substantiate the first reason.

Molding and core costs per ton may conform to the foundry average, but the other costs may increase with seasonal fluctuation in the labor market, increased administrative expenses, or inefficiency of management. The latter are not always easy to detect except by use of graphic charts to show percentage fluctuation over a number of periods.

Charts should never be used blindly. Tendencies on one chart should be checked carefully with relevant data on other charts, else wrong conclusions are very apt to be drawn.

2. Pig iron, ordered, received, used, on hand, unfilled orders of malleables all shown in tons. (See Form 9a.) Past history is useful to show policies of purchasing and trend of prices and forms a basis for future plans of management.
3. Tonnage losses in manufacturing throughout the various departments. (See Form 10.) This will stimulate better shop practice.
4. Capital, surplus, profit and loss, dividends. This is of interest to stockholders, bondholders, banks, creditors, also prospective purchasers. It shows the policy of the directors in financial matters over a long period of time.
5. Tons made, tons shipped. (See Form 3.) In a jobbing foundry the two should be close together, especially if the chart is made a cumulative one. A cumulative and a monthly chart could be plotted to advantage on the same sheet. If considered desirable the average cost per ton and average selling price per ton may be included.

CHAPTER IX

CONTRACTORS' ACCOUNTS

By Thomas W. Byrnes and K. Lanneau Baker

I. The Business of Contracting

Contracting—Past and Present

A contractor may be defined as one who agrees to execute certain work for a specified or definitely ascertainable sum. The work may consist of performing labor alone, or it may include the furnishing of materials as well as labor. The same broad principles of accounting apply to all contractors, regardless of the industry in which they are engaged. It is the purpose here to set forth these principles as they pertain to the accounts of contractors in the building trades.

In recent years great changes have been wrought in the business methods of contractors. In the vitally important department of estimating, the building contractor of earlier times relied solely on his own judgment, which was formed from personal experience. His work was supervised by practical men, few of whom had the advantage of technical training. In many instances his methods of financing were crude, collections being made from owners who had funds to spare, and payments, other than pay-rolls, being made when there was a surplus of cash. Accounts with owners were considered all-important, and constituted the main object of account-keeping. All costs were approximated, owing to the absence of accurate cost records. Hence serious deviations from original estimates could not be learned until the completion of the work, and then they could not be traced, nor could responsibility for them be accurately placed.

Operating in this random manner, the contractor made and

lost money; and so long as his competitors operated in the same way and his gains exceeded his losses, he was able to continue in business. The large profits made in some instances attracted a new and more aggressive element to the business, and competition became keener. The newcomers possessed the theoretical knowledge the old contractors lacked, and this technical training, combined with the experience of practical assistants, resulted in the submission of estimates prepared on a scientific basis. The business of the old contractors declined as a result, and in order to obtain work at all, they were obliged to reduce their bids until they found that in the cases in which they were the successful bidders, losses usually resulted.

At first it was thought that the newcomers were obtaining contracts simply by underbidding all competitors, and were taking losses merely to establish themselves, hoping to recoup later when the older contractors had been eliminated; but it soon became evident that this was not the case and that the newcomers were actually making a profit on the work awarded to them. It was obvious then that something was wrong with the antiquated system of operating, and that a change had to be made if the older contractors were to endure. A study was made of the advantages to be gained by the newer methods, with the result that engineering school graduates were added to the contractors' staffs to gather reliable information. In order to follow and check up the estimates as the work progressed, and to enable the executives to control intelligently the finances of the business, a comprehensive system of accounting was also necessary. These changes, added to his experience gained through many years of actual construction work, have placed the old contractor in a position to survive the test of close competition.

Building Contracting Procedure

Building is the art of erecting houses and other edifices. At the head of the building trade is the architect who devises the exterior of the building and the interior arrangement. The

land-owner engages an architect, who, after considering the size and shape of the lot, and the style of the building desired, prepares and submits plans; or this operation may take the form of a competition between a number of architects, each submitting his individual plan for the proposed structure, the owner selecting the most acceptable set of plans. It is customary for the architect to submit also specifications of materials required in the construction of the proposed edifice. Builders undertake work by contract, and for the purpose of tendering bids, these specifications, together with the working plans or drawings for the building, are sent to a number of contractors, who in turn submit parts to dealers in materials for estimates as to the cost of such materials delivered at the required point. Upon receipt of these estimates, the contractor computes the cost of the labor required, if it is to be done by his own organization, or secures bids from a subcontractor for the parts of the work which he does not care to perform himself. The material, labor, and burden figures are then assembled and on their basis a bid is decided on and submitted to the architect or to the owner. If his bid is successful, a formal contract is entered into with the owner.

The architect advises the owner as to the acceptance of the contractors' bids. He also supervises and directs the work, and in this capacity is the interpreter of the conditions of the contract and the judge of its performance. He approves all payments to the contractors, in accordance with the terms of the contract. As agent of the owner he has authority, as provided in the contract, to stop the work whenever it is necessary to insure the proper execution of the contract.

Types of Contract

The foregoing is the customary procedure followed when the contract is entered into between the owner and the contractor on a flat-sum basis, the contractor agreeing to do the work for a stipulated amount, which will include his profit. Contracts of this nature are often unsatisfactory, due to the many opportuni-

ties open to unscrupulous contractors to restrict their costs. The disadvantages of this type of contract have been recognized by many owners, and they have found another way of initiating contractual obligations between themselves and the contractors in the cost-plus contract, in which the contractor agrees to minimize the cost of construction and to be paid a fixed percentage of the total cost, or the sum agreed upon at the time of the closing of the contract.

It would seem at first glance that this form of contract would favor the contractor, because he is assured of a profit in any event, and is freed from all concern as to labor and material fluctuations during the progress of the work. The owner's interest is protected, however, by the architect who appoints a "clerk of the works," to be paid by the owner and to be constantly on the ground during working hours. The clerk sees to it that the specifications are faithfully adhered to so far as possible. He reports any seeming fault, and sees that no unnecessary expenses are incurred.

To protect the owner further from the unscrupulous contractor, who might be tempted to purchase materials and labor at the highest prices in order to increase the cost on which his commission is based, two methods have been devised to limit the cost in connection with the cost-plus contract. In the first method, a clause is inserted in the contract guaranteeing to the owner that the entire cost of the project, including the contractor's compensation, will not exceed a specified maximum sum. This guaranty forces the contractor to watch his costs carefully if he would keep his commission intact. The other method is the profit-sharing plan, whereby the contractor shares in any saving effected by him on the difference between the guaranteed cost and the actual cost. This is done to give the contractor an incentive to keep the costs down, consistent with proper construction. In cases of this kind it is customary to allow the contractor a much larger percentage of the saving than he would have earned were the same amount expended in costs.

In all forms of the cost-plus contract, the owner is entitled to examine all invoices, pay-rolls, and receipts for other expenditures. The owner may also require the contractor to supply a bond to insure the proper performance of the contract and the payment of obligations arising thereunder. The bond must be in such form as the owner may prescribe and with such sureties as he may approve. If a bond is required by instructions given previous to the receipt of bids, the premium is paid by the contractor; if subsequently, the premium is paid by the owner.

Insurance

The liability for injuries to workmen and destruction of the property by fire while in the course of construction have been so universally recognized that it is customary for the contract to contain clauses providing that the contractor shall maintain such insurance as will protect him from claims under the workmen's compensation acts and from any other claims for damages for personal injuries, including death, which may arise from operations under the contract, whether such operations be by the contractor himself, a subcontractor, or by one directly or indirectly employed by either of them. The owner may require that the insurance certificates shall be submitted to him in order that he may be assured of the adequacy of the protection. It is customary for the owner also to carry insurance to protect himself from contingent liability for damages due to the same causes. He is also obliged to effect and maintain fire insurance on the entire structure on which the work of the contract is to be performed, and upon all materials delivered in the premises, to at least 80% of the insurable value. In this instance he acts as trustee for whomever it may concern, and any loss is adjustable with, and payable to, him as such. The contractor is entitled to inspect all fire insurance policies, and if the owner fails to carry sufficient protection against fire, the contractor may insure his own interest and charge the cost to the owner.

To limit their liability, and also in order that assets accu-

mulated over a period of years may not be lost through claims resulting from a serious accident which would not be covered by insurance, contractors sometimes incorporate a separate company to prosecute a large or particularly hazardous engagement.

Time Limits and Payments

The terms under which the contract has been awarded and the payments are to be made are all set forth in the contract itself. In many cases a clause is inserted placing a time limit on the completion of the work, with stated penalties for delays, except where postponements are quite beyond the control of the contractor. When an owner is in urgent need of the premises, either for his own occupancy, or for the revenue they are expected to yield, a bonus is sometimes offered the contractor to effect the completion of a building in advance of the time limit. The standard form of contract stipulates that all time limits are of the essence of the contract, and that the law of the place of the building shall govern in the interpretation of the contract.

All payments made by the owner are based on statements of the architect certifying that the contractor is entitled to the amount specified. The kind of contract usually governs the method of payment. In flat-sum contracts the payments are based on the amount of work performed during a specified time, or necessary to carry the work to a designated point of completion. In cost-plus contracts it is customary to reimburse the contractor for his outlay of the previous month, each payment including also the agreed per cent, based on costs incurred during the month, to cover compensation to the contractor, according to contract. But neither the final certificate nor the final payment relieves the contractor of responsibility for faulty materials or workmanship. He is required to remedy any such defects and to pay for any damage to other work resulting therefrom which will appear within a period of two years from the time of installation. It is, of course, incumbent on the owner to give notice of defects with reasonable promptness.

Standard Forms of Contracts

The American Institute of Architects issues standard building contract documents, which include the following:

1. Form of agreement and general conditions of the contract
2. Bond of suretyship
3. Form of subcontract
4. Letter of acceptance of subcontractor's proposal

Some idea of the scope of the general conditions of the contract, which deal at length with the relations and duties of the owner, architect, and contractor to each other, may be gained from the following index to the articles of the general conditions in the standard contract form of the American Institute of Architects:

1. Definitions
2. Documents
3. Details and Instructions
4. Copies Furnished
5. Shop Drawings
6. Drawings on the Work
7. Ownership of Drawings
8. Samples
9. The Architect's Status
10. The Architect's Decisions
11. Foremen, Supervision
12. Materials, Appliances, Employees
13. Inspection of Work
14. Correction Before Final Payment
15. Deductions for Uncorrected Work
16. Correction after Final Payment
17. Protection of Work and Property
18. Emergencies
19. Contractor's Liability Insurance
20. Owner's Liability Insurance
21. Fire Insurance
22. Guaranty Bonds
23. Cash Allowances
24. Changes in the Work
25. Claims for Extras
26. Applications for Payments
27. Certificates and Payments
28. Payments Withheld
29. Liens
30. Permits and Regulations
31. Royalties and Patents
32. Use of Premises
33. Cleaning Up
34. Cutting, Patching, and Digging
35. Delays
36. Owner's Right to Do Work
37. Owner's Right to Terminate Contract
38. Contractor's Right to Stop Work or Terminate Contract
39. Damages
40. Mutual Responsibility of Contractors
41. Separate Contracts
42. Assignment
43. Subcontracts
44. Relations of Contractor and Subcontractor
45. Arbitration

The development of the standard documents commenced in 1887, when the Institute of Architects and the National Association of Builders undertook the preparation of a uniform contract satisfactory to the members of both organizations. From time to time revisions have been authorized in order to meet the changing conditions in the building trades. The documents, although intended for use in actual practice, are also regarded as a code of reference representing the judgment of the Institute as to what constitutes good practice. They have been approved by the national industrial organizations which comprise the building trades.[1]

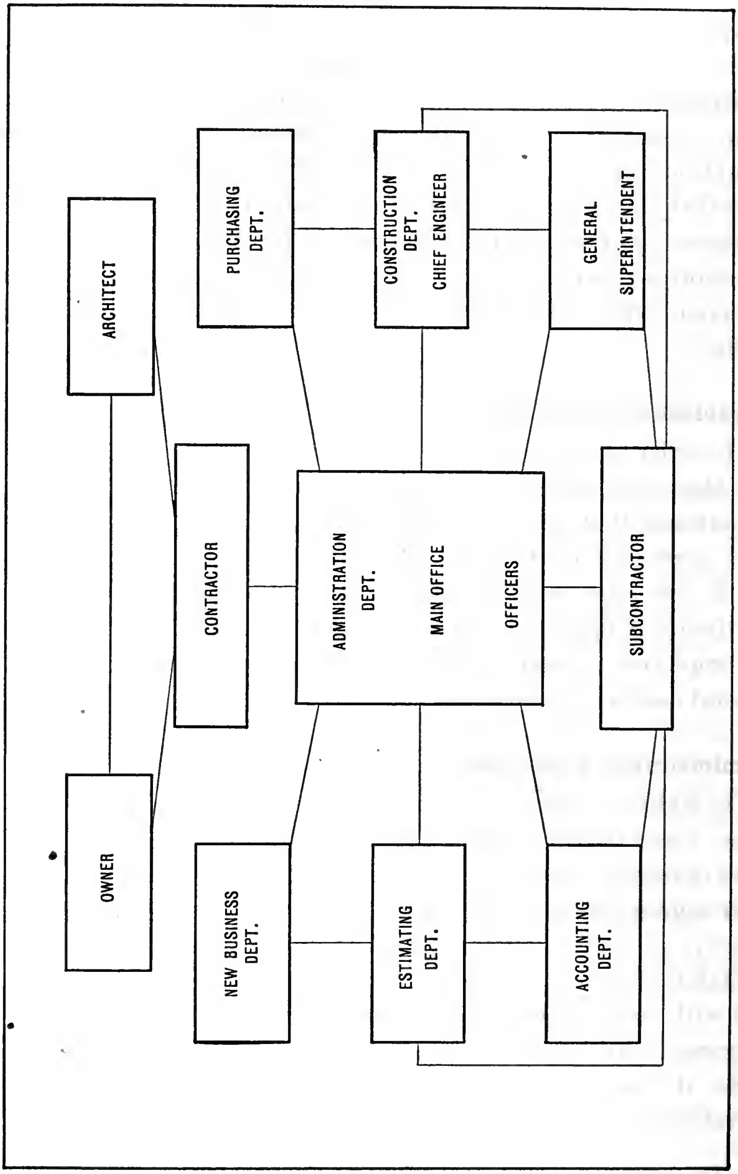
Organization of the Business

In order that a contractor's engagements may be successfully initiated and carried to a profitable termination, it is of prime importance that he surround himself with an organization not only aggressive in its quest for work and successful in bidding for it, but also departmentized and co-ordinated to produce continuity of operations on a piece of work from commencement to completion. Form 1 shows a typical form of organization for a general contracting business.

Administration Department

In addition to performing the customary administrative functions, there devolves upon the administration department the work of submitting the final bid, the preparation of contracts and their signing, the execution of all necessary bonds, the maintenance of adequate insurance, and the financing of all operations. It maintains also a constant contact with all other departments and with subcontractors, and, through the close observation of progress charts, contract cost records, and general financial reports, its executives are enabled to keep informed of current operations, so that variations from original estimates may be

[1] The documents are published and sold by the American Institute of Architects, The Octagon, Washington, D. C.



Form 1. Organization Chart of General Contracting Business

noted, investigated, and remedied in time to prevent serious loss in case the cost greatly exceeds the estimate.

New Business Department

The number and magnitude of building operations in modern times compel the contractor to maintain a staff whose duties are to keep in touch with architects and prospective builders, to follow up trade reports of contemplated construction work, and in general to be on the alert for leads which may result in signed contracts. It is also one of the functions of this department to adjust all differences which may arise from time to time between the architects and the contractor, in order that the latter may be favorably remembered when requests for bids are issued.

Estimating Department

The invitation to bid is accompanied by copies of the plans and specifications of the proposed structure. These documents are carefully studied by a corps of estimaters conversant with previous experience under similar conditions, trained in the purchase of materials and supplies, and versed in all matters pertaining to the fluctuations of labor supply and cost. Subcontractors satisfactory to the architect are asked to tender bids to this department for the subdivisions of the work which the general contractor does not elect to perform himself. When all material, labor, and burden figures have been computed, the administration department usually supplies an arbitrary amount for profit to be added, and the total constitutes the entire bid, which is transmitted to the architect. In case the bid is successful, copies of the estimate are furnished to the chief engineer and the general superintendent, in order that they may be able at all times to compare the cost of the results achieved with the standards set in the estimate. The purchasing department is provided with the materials section of the estimate, so that it may compare the prices actually paid with those used by the estimaters and arrange deliveries to meet demands.

Accounting Department

To the accounting branch of the contractor's organization is assigned the installation and maintenance of all accounts and records necessary for the proper control of construction and financial operations. All purchases, requisitions for payments on account of completed work, and all cash receipts and disbursements are reported to this division by means of proper forms. Separate accounts are kept for the cost of each contract, subdivided into several sections when required. This department acts also in an auditing capacity in reviewing pay-rolls and material invoices for all of the engagements in progress. It also prepares periodical financial statements, supported by detailed schedules of all important items for the information of the executives of the concern.

Purchasing Department

It is the duty of the purchasing agent to keep himself and his staff informed on all conditions affecting the purchases of materials and supplies. To this end he maintains files containing current information and offerings of commodities used in construction work. The routine of his department is very much the same as in a similar branch of a manufacturing concern.

Construction Department

In the last analysis the construction department is the one on which rests the responsibility for the successful consummation of construction engagements. The chief engineer of the firm is in command of all employees prosecuting the work, and is assisted by a corps of assistant engineers and draftsmen and a general superintendent. The general superintendent in turn looks to the various job superintendents for the proper progress of the contracts assigned to them. Careful consideration is given to each subdivision of the contract; distribution of plant (machinery), materials, and labor are planned in advance, and arrangements are effected for such co-ordination of effort as will result in unin-

terrupted progress. As work reaches the "requisition for payment" stage, the chief engineer is notified. Either he or a designated representative who has had no direct contact with the work inspects it, and if everything has been properly done, the accounting department is notified to prepare the requisition for the architect's approval.

II. Accounting Procedure

Record of Signed Contract

In outlining the accounting procedure in the contracting business, it will be the purpose to present and describe only such forms as are peculiar to the building trades contracting business, and to omit the other necessary forms not differing materially from those customarily used in cost or general accounting.

As soon as the signed contract has been returned to the contractor's office, it is given a contract number and a job record card (Form 2) is prepared therefrom in triplicate. This is a formal memorandum containing descriptive data only, and is intended to

Job____________________
Date________________ 192_

Description =

Job Started ________________ 192_ Job Finished ________________ 192_
Job Approved ________________ 192_
By____________________

Form 2. Job Record Card

furnish at any time a ready record of the work in process of completion or to be started in the future. The original is sent with the

plans and specifications of the job to the superintendent in order that he may prepare for the work as soon as practicable. The duplicate is forwarded to the accounting department, where it serves as the basis for the opening of two accounts, one with the owner in the accounts receivable (owners) ledger, and the other with the contract in the contract cost ledger. The triplicate is retained for reference by the contract department.

Purchasing

Upon receipt of the materials section of the estimate, the purchasing agent proceeds to order and cause to be shipped to the construction point the required materials and supplies. Many contracts require certain grades, sizes, and carvings of stone, structural steel, and other special materials, and these must be ordered for delivery in advance of the date required by the job superintendent. Some freight bills and purchases of an emergency nature are made and paid for by the field office upon the authority of the job superintendent from the imprest fund maintained for these purposes. Properly approved vouchers for all such payments are sent with the periodical report to the general office when reimbursement is requested.

Storing

It is customary for large contracting firms to maintain at convenient points storeyards or warehouses, in which are carried quantities of tools, equipment, and materials, which are standard, being used on nearly every piece of work undertaken. Stores ledgers properly classified are operated at the storage points to account for the materials consigned to them. These ledgers are controlled by records kept at the main office. In the case of materials shipped direct to a job, it is customary to charge them to the contract in question instead of passing them through the stores accounts. The forms used in connection with the purchase, storage, and issuance of tools, equipment, and materials are similar to those used in other lines of business to check stores, and

consist of the usual purchase orders, invoices, bills of lading, receiving records, stores ledgers, requisitions, reports of materials issued or transferred, delivery receipts, etc.

Transfer of Materials

Materials to be used on all subdivisions of the contract should be requisitioned on the usual forms. It often happens that in an emergency it becomes necessary to obtain materials from another contract in progress in the vicinity, or to transfer items from one storage point to another. For these purposes, and also for transferring unused materials on the completion of a piece of work, a "transfer of materials" blank is used. This takes the form of a journal voucher, and provides for the debiting and crediting of the contracts or storage yards affected, and also shows in detail the materials transferred.

Timekeeping and Pay-Roll

A timekeeper is assigned to each contract, his duty being to keep an accurate record of each employee. As soon as an applicant has been engaged, the timekeeper prepares a card containing the workman's name and number, class of labor, the date on which he commences work, rate of pay, etc., and furnishes him with a numbered identification brass check or card, preferably waterproof. The work record of each employee is kept on a daily time book or sheet, a recapitulation of which is made at the end of each week on a weekly pay-roll form, prepared in duplicate, which after approval by the job superintendent is used by the paymaster. Wages are usually paid on Saturday for the week ending the preceding Thursday evening. A pay-roll fund is maintained at each construction point for the purpose of paying off workmen who leave or are dismissed between regular pay days. The amount of the fund is governed by the extent of the construction work in progress. The weekly pay-roll is summarized as to distribution according to the contracts affected, and this distribution sheet, together with the original copy of the

weekly pay-roll, is vouchered and follows the course of an ordinary purchase voucher. In an endeavor to protect themselves from workmen who may claim that they have not been paid, some contractors require each employee to sign a receipt for his salary or weekly pay. Where foreign laborers, unable to write the English language, are employed, their receipts are sometimes taken on the pay-roll by means of the Bertillon system of finger-printing. Under another method the identification check used when paying off is taken up and another is issued when the employee resumes work.

Equipment—Control and Depreciation

The mechanical aids used on each contract vary from small hand tools to large single machines, such as steam shovels, hoisting machines, pile-drivers, cranes, derricks, dredges, construction locomotives, rolling stock, etc. In order that the general office may know at all times the location of such equipment, it is desirable that a record of each item be kept. For this purpose a subsidiary equipment ledger is used, and an account opened for each large piece of machinery and group accounts for the smaller pieces. This record contains the usual details, viz., the description of the equipment, the vendor's name, the date purchased, and the cost. Practice in this regard is fairly uniform among contractors, but there is some variance in the manner of following the transfers of equipment and charging for its use. All contractors will grant that depreciation of equipment constitutes an essential element in the cost of a contract. Some contractors prefer to open a temporary contract plant account for each piece of work, and to transfer to this account all items of equipment to be used thereon at the value at which they are carried in the main equipment ledger. At the time of the retransfer of such equipment, during the progress of the work or at its completion, an inventory and appraisal are made, and an amount representing the difference between its original transfer value and its retransfer value is charged to the cost of the work as depreciation of

equipment. Repairs and maintenance expenses during its use are charged to the cost of the contract affected. Under another method no actual transfer of equipment is made on the books, but notations are made on each ledger sheet showing the location of the items. In this case depreciation is charged at a fixed rate and for the time the machine is used on a particular contract. Under still another plan a daily depreciation rate is set, based on past experience for the use of each piece of equipment. The affected contract is charged for the time the machinery has been allocated to it.

As a general rule the various foremen are held accountable for the small hand tools. In order to minimize losses due to carelessness and theft, it is customary to take frequent physical inventories of such items. Upon the completion of each subdivision of the contract a final inventory is always taken, and all differences resulting between the amounts charged to the jobs on this account and the inventory values are included in the cost of the work. Although it is not advisable to depreciate machinery and equipment in use at the close of a fiscal year if no profit or loss is to be taken on a contract, yet if such an estimate is to be made on a partly completed piece of work, it will, of course, be necessary to consider depreciation for the elapsed time.

Burden

Burden, or overhead expense, in contractors' accounts is limited to such general expenses, including administrative, as cannot be charged direct to any particular contract. There are several methods of treating burden. Some contractors distribute it on a labor-hour basis; others on a basis of material and labor cost of work done during a specified period. Those who do not attempt a scientific method distribute overhead in an arbitrary manner, allocating the amounts according to the possible profit expected to accrue. The second method mentioned is the simplest of computation. The cost of each contract during the specified period is obtained from the Contract Cost ledger account by

deducting the cost at beginning of the specified period from its cost at the close of the period, and the costs of all contracts are aggregated. The overhead expenses are then determined, and each contract is charged with the proportion of the overhead expense that its cost bears to the total cost of work performed on all contracts for the period.

Recording Costs

A combination voucher register and journal (Form 3) is used in which are entered vouchers representing not only the usual items of purchases of materials, pay-rolls, and expenses, but also transfers of equipment and materials, charges and credits of subcontractors and owners, credits to work in progress, and other transfer entries.

DR.

Miscellaneous		Accounts Receivable	Amount Requisitioned	Contract Cost Ledger	Material	Accounts Payable
Description	Amount					

Form 3. Voucher

A job distribution summary is unnecessary, as the amounts are entered in total in the Contract Cost Ledger column, and the details of these entries are posted direct from the vouchers to the affected job account in the contract cost ledger, black ink being used for all debit entries and red ink for all credit and closing entries.

The contract cost ledger (Form 4) is used to enable the contractor to maintain control of all operations under each contract, and to know at all times the exact cost to date of each subdivision of the contract. By comparison with the estimated cost of each subdivision, as indicated in the statistical information entered at the top of each page, the contractor or his superintendent can

discover and correct deviations in actual cost of construction from the original estimate, or ascertain their cause. In order to avoid confusion and to simplify the preparation of requisitions, it is customary to use a separate ledger sheet for extras. When a requisition for a payment on account of work completed or in progress has been entered in the voucher register, the credit side of the voucher is posted to the affected job account in the contract cost ledger in the column, Amount Requisitioned. The total of these items is credited at the close of each month from the Amount Requisitioned column in the voucher register to the Amount Requisitioned account in the general ledger.

When a section of a contract is completed and is accepted by the architect for the owner, a requisition is passed for the final

CR.

Date		Voucher No.	Accounts Payable	Material	Contract Ledger	Amount Requisitioned	Miscellaneous	
							Description	Amount

Register and Journal

payment on that particular subdivision. Should it be desired to show a profit or loss on such completed work, the actual cost of each subdivision and the total of the amounts requisitioned therefor may be transferred by a journal entry debiting the Cost of Contracts account with the cost and crediting the Contract Sales account with the total amount requisitioned. The contract cost ledger is so drafted as to admit of the transfer of subdivisional profits or losses, or to allow the account to continue until the completion of the entire contract, at which time profits or losses can be shown on each subdivision and upon the total contract.

In closing the books for statement purposes at any time, the

Contract and Subdivision-Estimates			$	$	$	$	$	$	$	$	$	$	$	$	Amounts Requisitioned			
Date	Description	Voucher No.	A. Excavation	B. Foundation	C. Steel Construction	D. Masonry	E. Carpentry	F. Roofing	G. Plumbing & Heating etc.	H. Painting Decorating	J. Elevator Elec. Eq. Etc.	K.	L. Miscellaneous	Total Cost	Date	Description	Folio	Amount

Form 4. Contract Cost Ledger

trial balance of the contract cost ledger should be prepared in two columns, i.e., Total Cost of Work, and Amount Requisitioned. The total cost of work at the closing date represents an inventory item on contracts under construction, and should agree with the balance of the Contract Cost Ledger controlling account in the general ledger. The amount requisitioned represents the aggregate of the sums to which the contractor is entitled on account of work performed and which he presumably has received according to the terms of the contract. This total should agree with the balance of the Amount Requisitioned account in the general ledger. The inventory item or total cost, would appear on the balance sheet as an asset; the amount requisitioned on uncompleted work would be treated as a liability, in the same manner as any advance received against future delivery. If profits have been taken upon the completion of any subdivisions of any contracts, the total amount of such classification columns will have been deducted, as previously outlined, from the total cost before treating the latter as an asset, and the amounts requisitioned, on account of such classification, will have been deducted from the liability item, Amount Requisitioned. The balance sheet, in these instances, then shows as an inventory of work in progress only such work as is actually under construction and on which no profit has been taken, while the liability item, Amount Requisitioned, includes only payments received on account of uncompleted work. Many building contracting firms prefer not to close a job account in the contract cost ledger until sufficient time has elapsed subsequent to the completion of all work to render improbable any additional charges for repairs, claims, etc.

Subcontractors Ledger

Building operations, as they are conducted today, are performed by general contractors and subcontractors. In the case of the general contractor the entire contract is awarded to him, and he assumes the responsibility for the proper completion of all the work. He, however, sublets the parts of the work which he

does not care to perform himself, to specialists in their particular fields, who are able to do their work more skilfully, more economically, and more rapidly than he himself. No contractual relation is created between any subcontractor and the owner, but the general contractor is obliged to notify the architect, in writing, of the names of the subcontractors proposed for the principal parts of the work, and the general contractor is not permitted to employ any subcontractor disapproved as incompetent by the architect. The general contractor is as fully responsible to the owner for the acts and omissions of his subcontractors and of persons directly and indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. The general contractor agrees to bind every subcontractor by the terms of the general conditions, drawings, and specifications, as far as they are applicable to his work. The general contractor and each subcontractor are bound to each other by formal contract in the same manner as the general contractor and the owner are.

The subcontractor's system of accounts is on the same general plan as that of the general contractor. The general contractor becomes the principal and the subcontractor looks to him for reimbursement. Requisitions for payment are prepared and sent

Sub-Contractor________________
Address________________
Terms________________
Contract Location________________
Penalty________________
Must be completed by________________

Amount of Sub-Contract	Total		$____	$____	$____	$____	$____	$____	$____	$____	$____	$____
	Dr.	Cr.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.	Con't No.

Form 5. Subcontractors Ledger

to the general contractor in accordance with the terms of the contract. These requisitions are entered by the general contractor through the voucher register and journal as a debit to the

contract on which the work has been performed and a credit to accounts payable; the detail credit appears in the individual's account in the subcontractors section of the accounts payable ledger and is there extended also into the column allotted to the particular contract.

It often happens that a general contractor uses a subcontractor on several pieces of construction work. The subcontractors ledger (Form 5) has been planned to condense as much as possible the bookkeeping connected with this feature of the business, and yet to show on one sheet the status of each subcontract, the amount paid on the separate subcontracts, and the position of the subcontractor's account in total.

Requisitions for Payment

As the work progresses, the contractor is entitled to payments in accordance with the terms of the contract. Whenever this point is reached, the contractor prepares a request for payment, called a requisition (Form 6), and submits it to the architect. If after inspection the work described in the requisition is ac-

APPLICATION FOR CERTIFICATE FOR PAYMENT ON ACCOUNT OF CONTRACT For ______ To ______ By ______	Remarks Date ______
Approved ______ Architect	

Form 6. Requisition for Payment

cepted by the architect, he approves and returns it to the contractor. It is then presented to the owner for payment.

Requisition Register

To provide the executives of the contractor's staff with a means of ready reference in connection with the outstanding requisitions, a memorandum record (Form 7) is provided in which

REQUISITION FOR PAYMENT REGISTER										
Contract	January		February		March		April		May	
	Req.	Date Paid	Req.	Date Paid	Req.	Date Paid	Req.	Date Paid	Req.	Date Paid

Form 7. Requisition for Payment Register

all requisitions issued and payments thereon are entered. This form will show at all times the total amount requisitioned and paid on all contracts to date.

Architect's Certificate

Some architects prefer to retain the contractor's requisition and issue their own certificates authorizing payment by the owner. These certificates (Form 8) are prepared in duplicate; the original is sent by the architect to the contractor who presents it to the owner for payment, the carbon copy is retained for reference by the architect.

Recording Income

In the voucher register and journal, previously described, provision is made for entering charges to owners. Approved requisitions form the bases for the debits to the owners' accounts, the corresponding credits being to the Amount Requisitioned account in the general ledger, the details of which are posted for readily available statistical purposes in an appropriate section in

the affected job accounts of the contract cost ledger. On the completion of a flat-sum contract, or at such time as a profit may conservatively be taken on a cost-plus piece of work, a journal entry is made, transferring the cost of the work from the contract

$...... Certificate No...... Building No..........

..................192..

To..Owner

This will certify that under the terms of the contract

for work upon..

M..

Contractor for.......................... is entitled to the.......

Payment amounting to

.... Dollars

Amount of contract	$......	
Additional contracts	......	
Extra work	......	
Total	$......	
Amount of this certificate $........		....
Previously paid		Architect
Total to date	......	
Balance	$......	

$........ .... 192..

Received from..

.... Dollars

As per above certificate ....

Form 8. Architect's Certificate

cost ledger to the general ledger Cost of Contracts account; at the same time the total amount requisitioned on the contract is transferred from the Amount Requisitioned account to the Contract Sales account. At the close of each period the Cost of Contracts and the Contract Sales accounts, together with all

open undistributed nominal accounts, are closed out to the Profit and Loss account in the usual manner.

The Cash Records

The recording of the cash receipts and disbursements presents no unusual difficulties. The ordinary cash book columnized to provide for the control accounts required suffices. Separate imprest funds for petty disbursements and pay-roll requirements are advisable for the main office and each field office.

The Accounts Receivable Ledger

The accounts receivable (owners) ledger (Form 9) is intended to show at a glance the total amount of the contract and the proportion allotted to each subdivision, the amount due from each owner, the amount requisitioned on each subdivision of the contract, and the amount to be requisitioned.

The owner's account is opened from statistical information contained in the job record card and the original estimate. Many contractors have been accustomed to charge the owner's account with the entire amount of the contract at the time of signing, making the corresponding credit to an account called "Contracts." Owing to the fictitious and changing natures of the asset and liability items, which might include a number of these accounts, an attempt has been made in the form shown to reconcile the prejudices of old contracting practice with modern accounting methods, which permit of the preparation of a more accurate balance sheet than was possible under the older method, and which also furnish more information to the contractor than he previously obtained.

The approved requisitions form the bases for the debits to the owner's account, and reach there through the medium of the voucher register and journal, in which an entry is made debiting the owner's account and crediting the Amount Requisitioned column of the affected job account in the contract ledger. The owner's ledger account provides for the distribution of the re-

Owner __________ Contract No. __________ Terms __________

Address __________ Contract Location __________

Date of Contract __________ Architect __________

Must be Completed By __________ Bond __________

Penalty __________ Insurance __________

Original Contract and Subdivision			$		$	$	$	$	$	$	$	$	$	$
Date	Description	Folio	Dr.	Cr.	1. Excavation	2. Foundation	3. Steel Construction	4. Masonry	5. Carpentry	6. Roofing	7. Plumbing & Heating, etc.	8. Painting Decorating	9. Elevator Elec. Eq.	10. Miscellaneous

Form 9. Accounts Receivable (Owners) Ledger

quisition to enable the contractor to compare the total of the requisitions of any subdivision of the contract with the contract price of that section as indicated in the statistical record at the top of the page. When the owner remits for the amount of the requisition, his account is credited from the cash book in the usual manner. Any debit balance remaining in the owner's account constitutes a true asset, and is so treated in the balance sheet.

Profits on Contracts

The matter of profits on uncompleted contracts at the end of a fiscal period is one in which the accountant should take the most conservative attitude, and to this end it is believed to be usually unwise to attempt to place an estimate on the amount earned on the portion completed. There is much to be said on both sides of the question, and it does seem as though the periods which bear the burden of the construction work should profit accordingly; but in work of this character there are so many hazards, such as additional repairs, claims, labor troubles, etc., that it seems better to defer the computation of profit until the work is completed. In the case of flat-sum contracts, where it was formerly customary to enter a charge against the owner for the entire amount of the contract at the time of signing, and to credit Contracts with a similar amount, all costs incurred during the period were charged against Contracts, and at the close of each period an amount estimated to be required to complete the work in hand was debited to the Cost of Contracts and carried into the new period as a liability. The effect of such entries was that the entire profit expected to accrue on a contract was credited to a period during which only a part of the work was done. This caused the succeeding period or periods to complete the work without being credited with whatever profit was earned, and to stand whatever loss was suffered.

In the accounting procedure outlined here, provision has been made for the inclusion of subdivisional profits on flat-sum con-

tracts, if insisted upon, but experience and the practice of the more representative contracting firms require that they be deferred until the completion of the work.

In the case of cost-plus contracts, the profit may properly be considered and taken into the accounts as soon as the contractor renders his bill, as the profit has been then definitely earned.

Financing

To a contractor in good standing the financing of work in hand is not a difficult problem. His chief concern is to be supplied with funds for pay-roll purposes. Dealers in materials are accustomed to wait, and will not press the contractor for payment until the work has progressed to a point where they are certain he has been reimbursed for their particular commodities. Where the engagement is one of considerable magnitude, the initial outlay in moving cumbersome and costly equipment to the site and setting it up for use is heavy, and as there will be no work done for some time, against which requisitions for payment can be issued, the funds therefor must be provided by the contractor. This is done out of his own capital, or by borrowing. If his credit standing is satisfactory, his bank will accept his unsecured note or notes, having satisfied itself that the money will be used for the purposes indicated at the time of application. Municipalities and large builders recognize this feature of a contractor's early outlays and permit him to requisition for the first payment before very much work has been accomplished. After the contract is under way, the payment by the owner of approved requisitions for work completed should enable the contractor to continue the operations under the contract without embarrassment.

Conclusion

Contractors' accounts, to be effective, should show at all times the cost to date of all work in progress, and provide the means of comparing these costs with the estimated costs used in

the preparation of the bid, and also with the contract price of each subdivision. Information should always be available as to the amounts requisitioned. Reference to the owner's account should disclose the subdivisions of the contract which have been completed and for which requisitions have been issued. The cost records should be so constructed that it will be possible to determine the profit or loss on each subdivision of the contract, whether or not it is decided to take it into the general accounts. The status of the subcontractors' accounts, both as to the total amount due each and its distribution over subcontracts, where the subcontractor is engaged on more than one contract, is important, and the records should be drawn up to furnish this information. The arrangement of accounts in the general ledger should be such as to supply readily the data required for statements of actual assets and liabilities, and of profit and loss.

CHAPTER X

ACCOUNTING IN THE COFFEE TRADE

By Roy B. Kester

Types of Distributers

At the present time many diverse types of business organizations are devoted to the distribution of coffee, among which the more important are: the green coffee man, usually a broker or importer, who deals exclusively in the green berry; the roaster and wholesaler, who buys the green berry, roasts and sells it only to jobbers; the wholesales grocer, who sells a line of product put up for him and bearing his name, or who does his own roasting; the coffee and tea retail merchant, who may also handle spices, extracts, baking powder, rice, peanuts, candies, etc.; the chain store; and the perambulating wagon door-to-door organization, which may have its own roasting plant. In a given business are often found mixtures of many of these features.

It is the purpose of this chapter to discuss the more salient accounting features and problems of some of these types of organizations. No attempt is made to develop a complete system of accounting for any of these types, only so much being given in the matter of forms and records as will make possible a ready understanding of the problems involved and the method of handling them.

The main divisions of the discussion of the subject will be as follows:

1. Green coffee, its importation and marketing.
2. Trading in futures on the exchange.
3. Roasting and retailing.

I. Importation and Marketing of Green Coffee

Importing Coffee

For a proper understanding of the accounting problems in the coffee business some knowledge of the methods of importation and trading are necessary, as the two sources from which a supply can be drawn are the foreign and the domestic markets.

The greater part of the coffee consumed in this country comes from Brazil and is shipped either on consignment or directly to the importer, the transaction being carried on through the foreign exporter's domestic agent. In the case of Central American coffee brought into the country, the importer finances the grower and extends credit to the planter to enable him to raise the crop.

When the exporter's domestic agent has received an inquiry from an importer, he cables the exporter, stating the number of bags and the kind of coffee wanted, whether the price to be quoted should include cost, freight, and insurance, or cost and freight only, and also the medium of payment, as sterling or dollars. The exporter gathers such information as will enable him to offer at a profit. The prevailing replacement price of coffee is first ascertained regardless of the price paid by the exporter for the stock he has on hand. The freight is then added to this replacement cost, and if the inquiry is C. I. F. (cost, insurance, and freight), the insurance charge is included. The rate of exchange at which a draft can be sold is also considered in determining the price the American buyer should be quoted. The exporter always quotes his offering price in the currency of the importer's country, although he may demand payment in some other currency.

Upon the receipt of the exporter's offer the importer, if the price is satisfactory, cables his acceptance, repeating the number of bags, the description of the coffee, and the price. He also gives his name, the name of the drawee bank, and the name of the American bank to whom the documents are to be sent should the drawee be a London bank. Previous to cabling, the importer

obtains an authorization in the form of a letter of credit, permitting him to draw on the London bank.

Shipment and Financing

When the exporter receives the cable of acceptance, he immediately engages steamer room and proceeds to fill his contract, which must be performed within 30 days, unless otherwise stipulated.

Should the exporter have the coffee on hand, he is said to be "long of the market"; but if he must go out and buy, he is said to be "short of the market," and must cover as quickly as possible, which will be at a profit or a loss, depending upon whether the market price is lower or higher than the export price quoted.

As soon as the steamship agent informs the exporter that the steamer is ready for its cargo, the required number of bags are deposited in the hold of the ship in the presence of the exporter's shipping clerk, and for every 20 bags of coffee placed in the hold of the ship a receipt in the form of a card is given the clerk. After all the coffee has been transferred to the vessel, the cards are taken by the exporter and exchanged for a bill of lading, to which he attaches an invoice, and his draft or bill of exchange drawn on the London bank specified by the importer. He sells the draft, with the documents attached, to his local bank at the rate of exchange agreed upon, receiving payment in his country's currency. From this point the exporter has nothing further to do with the transaction.

The bank which has bought the draft may sell it to the local branch of the London bank. This branch sends the bill of exchange to London, with documents attached, for acceptance. After acceptance the drawee notifies its American correspondent bank of the fact and requests that payment in sterling be made a certain number of days (usually 90 days) after the date of acceptance. Several days before maturity the importer buys the required amount of sterling bills in the exchange market and delivers them to the American bank for remittance to the London bank.

The American importer cannot secure possession of the documents until he delivers the sterling remittance, unless the American bank, which receives the documents, is willing to take a trust receipt, by means of which the importer promises to pay the original draft out of the proceeds of the sale of the coffee, title to the coffee still resting with the correspondent. When the coffee is sold, the importer takes the necessary steps to pay the bill of exchange, as described above. Should the credit of the importer be unsatisfactory, the American bank may allow him to take the coffee only in small lots, and also only after each lot has been sold and paid for. Payment of the draft would thus be made in instalments.

Sterling credits were the most common form of financing used by American importers of coffee before the war. Nowadays, however, dollar credits are preferred because of the violent fluctuations in the rate for sterling exchange. The drafts under these latter credits are drawn on American banks, notably New York banks, and the importers are not obliged to buy exchange in reimbursing the drawee banks at maturity, since the drafts are payable in dollars. They have only to settle with checks on their own banks.

Costs of Handling Green Coffee

The first cost which an importer has to meet is the commission charged by the bank issuing the letter of credit. In case of sterling credits, payment has to be made in London. Drafts are drawn at 90 days' sight, and if remittance reaches London before the maturity of the draft, interest is allowed, usually at a rate 1% below the Bank of England rate, while the commission charge depends upon the number of days payment is received before the draft is due. The following commissions are customary: where remittance reaches London during the first 30 days 1/4%; 60 days 3/8%; at date of maturity 1/2%, the regular charge.

The second item of cost which a coffee importer has to bear is that of marine and war risk insurance. Coffee shipped from

foreign ports must be covered by marine insurance, and in time of war by war risk insurance. The marine insurance charge amounts to 25 cents per $100 of value. If the contract includes the payment of insurance by the shipper, the cost will not, of course, include this charge, but such contracts are not usual.

The freight charge need not be considered in estimating the cost of coffee, as it is the custom for the exporter to bear this charge. The outlay must, of course, be considered if paid by the importer. There is also a custom house entry charge of from $3 to $5 which includes a government tax of $1. The third cost, amounting to 15 cents a bag, is for sorting the coffee when taken from the ship, as the individual consignments are not kept separate but are intermingled in the ship's hold.

Other expenses are:

1. A charge of 3 cents per 100 pounds for transferring the coffee from the ship to the pier warehouse in case the vessel does not enter the port.
2. A charge of 10 cents per bag for transferring the coffee from the pier warehouse to a licensed warehouse.
3. A charge of 8 cents per bag per month for storing, fractions of a month being considered a full month.
4. A charge for insurance based upon the value of the coffee stored.

In addition to the above charges, the green coffee merchant must bear any loss due to shrinkage of weight. The Brazilian shipper in sending his coffee bases his charge on 132 pounds per bag. But a bag may weigh more or less than this amount, and if dishonest, the shipper may charge for more than the actual weight. Any such practice, however, if continued very long, results in the American importers discontinuing business with him.

During shipment and storage coffee may gain a little in weight due to its absorption of moisture. On the other hand, bags of coffee frequently lose weight from drying or petty thievery. In fact, such losses may amount to from 1% to 2% before the coffee is finally sold.

The final charges are for sampling, weighing, and broker's commission. When a shipment of coffee arrives in this country, the steamship company takes a sample from each bag and sends them to the consignee through some coffee-broker who makes a charge of $1 per case for sampling.

Recording Coffee Imports

"To arrive" or import purchases are recorded in much the same way as other purchases, although because of the many details to be kept track of in importing, the form of the purchase record may be more complex, and auxiliary records are, therefore, usually found convenient. In some cases, however, the original papers and documents connected with an importation are not entered on a formal record, merely being kept together in a file for reference in case of need.

At the time the contract is signed with the exporter's New York agent, some firms enter the particulars of the contract in a contract register or due book. This may be looked upon as only a statistical record, serving as a memorandum of the obligation incurred to purchase. Provision to indicate payment of the contract is usually made a part of this record.

A letter of credit having been arranged for under the terms of the purchase contract, a record of the transactions under this letter is necessary. For this purpose a letter of credit book (Form 1) is used. One page of this book is devoted to each bank issuing letters, and the information is entered as it becomes available. In applying for a letter of credit an importer cannot tell the exact amount a shipment of coffee will cost; for this reason he applies for an amount which will more than cover the invoice price. Hence at the time of payment of draft, there may be a balance in favor of the importer, which is noted in the balance section. This balance lapses automatically unless used before the date of expiry of the letter of credit.

For the purpose of bringing "to arrive" purchases into the accounts, a purchase journal known as an "importation book"

LONDON JOINT CITY AND MIDLAND

Venture	Due: London	Due: New York	Paid	Vessel	Arrived	Bags	Amount Draft	LC No.	Shippers	Approx. Dollars	Journal	Remittance Received London	Remitted
	June 3	19— May 24	May 24	Lucerne	Mar. 9	1 500	£5 492 11 10	500	Braz. Cof. Co.	$26,694		May 31	£5 513 2 11

Rate of Exchange	Dollars and Cents	Date	Balances: Sterling	Balances: Rate	Balances: Received	Balances: Paid	Journal	Letters of Credit: Date Issued	Letters of Credit: In favor of	Letters of Credit: Port	Letters of Credit: No.	Letters of Credit: Sterling Amount	Letters of Credit: Nature of L/C	Letters of Credit: Expiration Date	Remarks
4 87	$26 849 02	June 10	£ 57 9 0					19— Mar. 7	Braz. Cof. Co.	Santos	500	£ 5 550	90 d/S	June 14	

Form 1. Letter of Credit Book

or "register" is used. Form 2 shows the type of information recorded in it. Upon the arrival of the coffee in port, entry is made in this record from the purchase invoice. It will be understood that the banker issuing the letter of credit—and not the exporter—is the creditor in all purchases financed in this way. Accordingly, current postings are made to the credit of the various banks issuing the letters of credit used, and at the end of the month Merchandise Purchases is charged. These bank accounts, being few in number, are usually carried on the general ledger.

Coffee purchases are frequently analyzed in the record as to kind, e.g., Santos, Rio, Colombian, Maracaibo, Java, etc. This analysis is sometimes effected through the use of a separate register for each kind.

The commission charged by the banker may be credited through the importation register by being added to, and therefore included as a part of the purchase price; or it may be recorded through the cash book when payment is made to the bank. Many costs are incurred in connection with imports which are not incurred with domestic purchases. These have been enumerated above. At the time of closing the books these expenses should be included as a part of the "cost of goods sold." The usual formula, viz., that all costs up to the point of sale should be considered as a part of the cost of goods sold, is in the coffee trade not generally applied to include storage expense. This practice does not seem to rest on sound reasoning.

When the books are closed, extraordinary care must be exercised to see that all liabilities for coffees to arrive are entered. The contract register and letter of credit book will usually furnish this information. Only approximate amounts can be used, except in the case of invoices which have been received ahead of the coffee. These coffees must, of course, be included in the inventory.

Recording Spot Purchases

Domestic purchases are called "spot" purchases, as distinguished from importations, or "to arrive" purchases. Spot pur-

Santos Importation

Steamer	Date Arrived		Marks	No. Chops	Chop Numbers Bags in each Chop		Total Bags	Total Pounds	Grade	Price	Amount			Freight		
														Rate	Amount	
Lucerne	Mar.	9	S S / E O	2	1 / 400	2 / 600										
			E P	1	1 / 500		1,500	198,000	7's	13.80	27	324	—	42¢	630	—

Register

Net Amount			Sterling Rate	Sterling Amount				Bankers	Shipper	Agent	Remarks
26	694	—	4.86	5	492	11	10	London Jt. City & Midland	Brazilian Coffee Co.	J. R. Sweet	

Form 2. Importation Register

chases between green coffee merchants are usually for cash, the amount being based on a pro forma bill. Delivery of the purchase is effected by the transfer of warehouse receipts. Until the coffee has been graded and weighed, the true amount of the purchase cannot be determined. Hence, use is made of the pro forma invoice, in which the amount is based on the standard weight per bag and the grade is that named in the contract. The cash payment made is usually somewhat less than the amount so determined. When the true invoice is received, cash payment is made for the balance.

To record spot purchases, a purchase register (Form 3) or creditors book, is used. Since the transaction is usually for cash, less 2%, and first payment is based on the pro forma invoice, with balance in 10 days, the use of three lines for each creditor and three money columns to record payment, causes this record to serve also as a subsidiary ledger. Entries in the record will usually show the debit for the initial cash payment several days before the credit appears, a few days being necessary to weigh and grade, and to receive the true invoice. At the end of the fiscal period, any open purchases on the register will be closed on the basis of the pro forma invoice, Purchases account being debited and Accounts Payable credited for the month's total. In the following month when the correct amount is known from the true invoice, another entry bearing the original invoice number is put through for the additional amount. The adjustment is made through the general journal when the true amount is less than the payment made on the pro forma amount.

Marketing Coffee

Coffee is marketed in various ways. The wholesaler may distribute his coffee to retailers either through brokers or through salesmen or both. In other cases large importers distribute their coffee to consumers, utilizing for that purpose large chain stores, or maintaining their own distributing agents in each city.

The expenses borne by a coffee merchant in connection with

Date		Creditor's Name	Mark	Description	Bags	Weight	Tare
Jan.	*15*		*S A L*				*2#*
			Bogota	*Bogota*	*500*	*80,500*	*1000*

Net	Price	Amount	Terms	Due	Date		Payments Jan.	Payments Feb.	Payments March	Remarks
	16¢	*12,720 —*	*Cash 2%*	*Jan. 25*	*Jan.*	*15*	*10,000 —*			
79,500					*Feb.*	*1*		*2,465 60*		
								254 40		*Discount*

Form 3. Spot Purchases Register

sales vary according to the terms agreed upon by the purchaser. Green coffee may be sold ex-ship (from ship), in store (from warehouse), F. O. B. shipping point or destination. In the first and second cases the buyer pays all transportation charges from the ship or warehouse to his place of business. The other two are self-explanatory.

The weighing charge amounting to 4 cents per 100 pounds is borne by the seller, unless otherwise agreed upon, as is also the brokerage commission, which ranges from 15 cents per bag to 1% of the selling price.

When a concern deals with jobbers and retailers, it secures the services of coffee-brokers as well as the services of salesmen. It keeps in touch with these brokers, scattered throughout the country, by means of the telegraph. Orders from the brokers are received in code and confirmed by mail. To facilitate the handling of these orders, each sample of coffee sent to a broker is given a "telegraph number" at the time sampling orders are drawn on the warehouse. These numbers, which represent different chops of coffee (bags of coffee of a given size in a given contract constitute a "chop"), are entered in a list book, in which the following information is also recorded:

1. Mark of each lot represented by the telegraph number.
2. Chop number and bags.
3. Price of each mark.
4. Description of the coffee.
5. Name of the vessel on which the coffee was shipped.
6. Arrival date.

Price lists of the different lots of coffee on hand are made up weekly and sent to the brokers representing the coffee merchant. These lists show the telegraph numbers, marks, chop numbers, number of bags, and price per pound of each kind of coffee. With these lists in hand a broker can easily tell the price of each grade of coffee and how soon shipment can be made.

In sending an order by telegraph, the salesman or broker needs merely to give the code word for that number, and when

the telegram is received, reference is made to the list book under that telegraph number for the marks and other particulars concerning the coffee wanted. The telegraphic order serves as evidence of the buyer's acceptance of the contract. If the sale is to a broker in the same city, a regular contract is required. Upon the receipt of either telegram or contract, a clerk confirms the sale by letter, and the broker in his turn sends an acknowledgment. This is done to avoid mistakes.

When the telegram or contract is received, particulars as to vessel and storehouse are taken from the stock book and are entered upon the telegram or contract. A delivery order is drawn on the warehouse in which the coffee is stored and an order is sent to the weighers, requesting them to weigh the coffee and make shipment. As soon as the weigher's report as to gross weight, tare of bags, etc., is received, the weights are inserted in the sales book, the amounts are extended, and the bill is rendered with a copy of the weigher's return and bill of lading attached.

Recording Sales

Usually some form of analytical sales register or journal is used for entering sales on the books, although the duplicate sales invoices with proper monthly recapitulation serve that purpose well. The simplest form of analytical sales book suitable for a concern handling green coffee only should provide columns for the following information:

1. Invoice number.
2. Name of purchaser.
3. Stock book number.
4. Date of order to weigher.
5. Date bill of lading is mailed.
6. Date of pro forma invoice.
7. Date of actual invoice.
8. Classification of sales, as city, country, export.
9. Number of bags.
10. Kind of coffee sold, such as Santos, Rio, etc.

The amount of the pro forma invoice is of course entered only when the actual amount is not known. Adjustment of the pro forma amount when so entered is made in the same manner as in the case of purchases.

Sales on the coffee exchange, explained later, are frequently kept by themselves in a separate register.

The ordinary form of customers balance ledger is usually found. Another type of ledger known as an "accounts receivable book" (Form 4) has some points to commend it and is particularly convenient for the purpose of ageing customers' accounts. This record does not show the volume of business done during the period with each customer. Since a shipment of coffee is as a rule paid for before another shipment is made, and purchasers take advantage of the cash discount offered, it is more convenient to record customers' accounts in a register instead of a ledger. This register is somewhat similar in form to a voucher register. A separate page or several pages are allotted to the sales for each month and in addition country sales are separated from city sales. Each account appears on one line and extends across two pages. Normally only one open account with a customer will be found on any page, although he may make several purchases during the month. Previous accounts must be settled before new credits are extended him. The Due Date column is divided into four sections, providing space for four months. To the right of the How Paid column there are six columns corresponding to the six months in which payments are entered, should any account be paid in instalments.

The total of the amount column shows the total sales on credit for each month. As each customer remits, the date of payment and how paid are entered on the same line as the account appears. If a debtor pays for a particular transaction in instalments, the total paid on account during a month is entered in that month's column. At the end of the month, the amount and the month columns (the latter showing the payments made for that month) are totaled; so that in any given month the difference between

Bill No.	Date	Name	Location	Terms	Amount	Due				Date Paid	How Paid	Jan.	Feb.	Mar.	April	May	June
						Jan.	Feb	Mar	Apr.								

Form 4. Accounts Receivable Book

the amount column and the sum of the totals of the month columns for that particular month gives the total of the accounts outstanding for that month. The sum of the open accounts for the different months should correspond to the balance of the controlling account in the general ledger.

The payments appearing in the month columns of each month are posted from the cash book, and as a check on posting, the sum of the totals of all the columns for that month throughout the accounts receivable register should equal the footing of the Accounts Receivable column in the cash book.

Stock Records

Because green coffee is sold in standard size bags, it is an easy matter to operate a stores or stock record. The advantages of such a record are apparent in the case of a commodity the market for which constantly fluctuates. The form of stock book shown in Form 5 may be used. The information is not filled in immediately, but gradually as the data are received.

Stock for the

Cost	Marks	No.	Amount Bags		Amounts Sold										Tare
			Bought	Received											
					32,987	*65,984*	*32,869*						*Inweight*	*131,868*	
					250	*500*	*249*						*Outweight*	*131,840*	
	S S E O	*1*	*1,000*	*999*	*1/2*	*2/4*	*4/7*						*Loss*	*28*	*1%*
													Inweight	*132*	
													Outweight		
		1		*1*											

Form 5.

The quantity of each shipment sold is entered daily, showing the number of bags and their actual weight. When the entire

quantity received has been sold, the actual weight of the total quantity of that mark and chop number received is recorded and compared with the out-weight, i.e., the weight of the quantity when sold. The difference between the two shows the loss in weight, which loss, as previously stated, may be due to leakage or theft from the bags while in transit, sampling, the evaporation of moisture, handling, and so on. A separate page is assigned to each month, the dates of purchase being the deciding factor.

Weekly Stock Report for Administrative Purposes

In order that the coffee merchant may know the quantity of each kind of coffee in stock, a "weekly stock report for administrative purposes" (Form 6) is made up, the data being classified according to the kind of coffee, such as Santos, Rios, Maracaibos, etc.

To the number of bags in stock at the beginning of the week are added the spot purchases and number of bags arrived on "C & F" contracts during the week. The number of bags sold is

Month of December

Descripton	Bought of	Date of Purchase	Ex. Ship	Stored	Expiration Storage		Weigher	Date Trans.	Bags	Storage Paid	
Santos	*Brazilian Coffee Co.*	*12/7*	*Lucerne*	*R/31*	*Jan.*	*12*	*C. & H.*				

Stock Book

subtracted from this sum, the result giving the number of bags on hand, i.e., "spots" (with which next week's report will begin).

Week Ending December 13, 19—

			1	2	3
Santos:		Spot	19,507		
		Arrived	1,000		
			20,507		
		Sold	2,686	17,821	
		Afloat		18,750	36,571
Rio:		Spot	2,602		
	Bot.	"	113		
			2,715		
		Sold	572	2,143	
		Afloat		16,000	18,143
Bogota:		Spot	2,171		
	Bot.	"	632		
			2,803		
		Sold	778	2,025	
		Afloat		......	2,025
Maracaibo:		Spot	2,037		
		Arrived	1,530		
			3,567		
		Sold	800	2,767	
		Afloat		1,615	4,382
Misc. Milds:		Spot	194		
		Sold	10	184	
		Afloat		......	184
Mocha & Java:		Spot	978		
		Arrived	250		
			1,228		
		Sold	517	711	
		Afloat		1,950	2,661
					63,966

		Stock 12/6	Purchases	Arrivals	Sales
Santos	C & F	35,271	3,986	1,000	2,686
Rio	C & F	18,419	183	.....	.....
	Spot	......	113	.....	572
Bogota	Spot	2,171	632	.....	778
Mara.	C & F	4,554	628	1,530	800
M. M.		194	......	.....	10
M. & J.	C & F	1,355	1,823	250	517
		61,964	7,365	2,780	5,363

Form 6. Weekly Stock Report for Administrative Purposes

To this is then added the number of bags contracted for. To prove the accuracy of the report, the total stock, spots, and "to arrives," at the end of the previous week, the number of bags purchased, the number received, and the number sold are tabulated according to kind at the bottom of the sheet. The Arrivals column does not enter into the proof, since it shows merely transfers from "to arrives" to "spots" during the week.

Weekly Stock Report for Insurance Purposes

In order that the stock of coffee may be well covered by insurance, a stock clerk checks up at the beginning of each week the quantity of coffee on hand at the various warehouses, and compares its value with the amount of insurance carried the previous week. The insurance is then increased or decreased accordingly.

The Green Coffee Inventory

The stores record, the weekly stock report, and the contract register provide the data from which the inventory is taken at the close of the fiscal period. The information concerning the inventory of green coffee is analyzed according to the name of the vessel from which received, the warehouse in which stored, mark, quantity shipped, weight, grade of coffee, description, price per pound, and amount. The weight of the unbroken marks is estimated. If a part of each mark has already been sold, the average weight per bag is found and used in finding the weight of the unsold bags. By listing all coffee of the same kind together, an average grade can be used for pricing purposes, and this eliminates a great amount of detailed figuring. Because there is an organized exchange for trading in green coffee, most merchants value inventory at the market price, i.e., on a liquidation basis. Market price, less 2%, the standard terms for spot purchases, is the usual basis. In order to keep out of the records of regular operation any unrealized profit or loss, cost price should be used for determination of gross profit, after which the adjustment due to placing the inventory on a market basis should be shown.

This adjustment figure should be entered in the Reserve for Market Fluctuations account, and both cost and market price should be shown on the balance sheet.

The need for including all coffees contracted for but not yet received has been pointed out. In case the credit of the importer is poor and the bank refuses to release the coffee, except in small lots, the method of correctly showing on the balance sheet the coffee not released presents a nice problem.

II. Trading on the Exchange

The Coffee Exchange—History and Procedure

Dealings on the New York Coffee and Sugar Exchange present many peculiarities. Accounting for these transactions is dependent upon a knowledge of the practices and customs of the trade, the more relevant of which will now be explained.

The present New York Coffee and Sugar Exchange was incorporated in 1881 under the name of "New York Coffee Exchange." In 1885, it was reincorporated under the name of "The Coffee Exchange of the City of New York," and in 1916, owing to the inclusion of sugar as another commodity handled, it again changed its name, taking the present one.

Foreign coffee merchants often become members of the New York Coffee Exchange either to take advantage of a reduced commission to members and secure the advantages of the exchange's system of arbitration in trade disputes, or merely to secure the standing which membership in the coffee exchange gives in the trade. To be eligible for membership, a man must be twenty-one years old, of good character and commercial standing, and his nomination must be approved by the board of managers. Once elected to membership the new member must either pay an initiation fee of $10,000, or purchase a membership from some member.

The coffee exchange is used by merchants for the purpose of speculating in coffee or for the purpose of preventing by means of a "hedge" transaction a loss on an importation of coffee.

Coffee may be delivered against the contracts executed on the exchange, but in the majority of transactions there is no actual delivery. Contracts for future delivery, i.e., "futures" or "options," rather than actual deliveries are dealt in, and settlement is made by the payment of differences between contracts. Of course, direct settlement can be made. This method of settlement is explained later.

Grading and Pricing of Coffee

The coffee exchange sets the standard by means of which the prices for the different grades of coffee are determined. The prices for the various grades are based upon the number of imperfections in the green coffee as compared with the standard. Such imperfections consist of black beans, broken beans, shells, immature beans or quakers, stones, and pods. The black beans are taken as the unit in calculating the number of imperfections. The calculation is done according to the following scale:[1]

3 shells	equal	one black bean.
5 quakers	equal	one black bean.
5 broken beans	equal	one black bean.
1 large stone	equals	two to three black beans.
1 medium stone	equals	one black bean.
2 small stones	equal	one black bean.
1 pod	equals	one black bean.

A 1-pound sample of green coffee is taken from a lot, examined for its imperfections, and graded according to the following scale:

Type No. 1	No imperfections. This coffee rarely exists.
Type No. 2	6 black beans or equivalent defects.
Type No. 3	13 black beans or equivalent defects.
Type No. 4	29 black beans or equivalent defects.
Type No. 5	60 black beans or equivalent defects.
Type No. 6	110 black beans or equivalent defects.
Type No. 7	Graded by comparison with the recognized exchange types.
Type No. 8	Graded by comparison with the recognized exchange types.

[1] From *Tea and Coffee Trade Journal*, July 1917.

Qualities inferior to No. 8 are not admitted into the United States.

The basis for quotations of the New York Coffee Exchange is Rio type No. 7, and all other types move in a fixed relation to it, as shown in the following table:

Brazilian Coffee. Not Santos		Santos Coffee		Other Kinds. Not Brazilian	
Type		Type		Type	
No. 1	180 points* above base	No. 1	260 points above base	No. 1	300 points above base
No. 2	150 points above base	No. 2	230 points above base	No. 2	250 points above base
No. 3	120 points above base	No. 3	200 points above base	No. 3	200 points above base
No. 4	90 points above base	No. 4	150 points above base	No. 4	150 points above base
No. 5	60 points above base	No. 5	100 points above base	No. 5	100 points above base
No. 6	30 points above base	No. 6	50 points above base	No. 6	50 points above base
No. 7	Base	No. 7	Base	No. 7	Base
No. 8	50 points below base	No. 8	50 points below base	No. 8	50 points below base

* A point is a hundredth part of a cent.

Thus, if Rio No. 7 is quoted at 8.10, Rio type No. 3 would sell at 9.30 (8.10 + 1.20), Santos No. 3 would be quoted at 10.10 (8.10 + 2.00), and Maracaibo No. 3 also 10.10. The unit of quotation is the pound, the price of which is given in cents and decimal fractions of a cent.

Illustrative Exchange Transactions

An example will make clear the procedure in an exchange transaction. Suppose an importer in the fall of the year orders 500 bags of coffee in Brazil, costing 9 cents per pound, and is notified by the exporter's agent that the coffee will arrive in this country in December. If by the time the importer receives his coffee, the price drops to 8 cents per pound he will sell his coffee at a loss. He may prevent the loss, however, by resorting to the method known as "hedging," which consists of selling on the Coffee Exchange the same amount of coffee for delivery in December. If he is a member, he will conduct the sale of the future through his trader; if he is not, he will employ a broker member

for the purpose. Upon receiving the importer's order to sell, the floor trader steps over to the ring and makes an offer to sell coffee for December delivery at 9.10 cents per pound, shouting, "Offer December delivery at 10," (the number of cents being omitted to save time, for everybody knows the number of cents that coffee is being dealt in at the time). Assume that another trader bids 9 cents flat for December delivery and that importer's trader meets the bid half, closing the transaction at 9.05 per pound. The importer is now under contract to deliver 500 bags of coffee in December at the above price.

When that month comes round, he can do one of two things to fulfil his contract. He can deliver the coffee he has just imported, or he can buy on the exchange a future contract, also for December delivery, to offset the one he has purchased, and thus cancel his hedge. He usually takes the latter course. If the price has risen to 10 cents when he buys a future, he suffers a loss in his hedge of .95 of a cent, or the difference between the prices at which he has sold and bought the December option. However, he can sell the 500 bags of coffee he has just received from Brazil at 10 cents to another customer, and his profit here offsets his loss on the hedging transaction. If, on the other hand, the price of coffee has dropped in December to 8 cents per pound, he makes a profit of approximately 1 cent per pound on the hedging transaction, which offsets the loss he sustains when he sells the coffee he has received from Brazil.

The transactions of a speculator in futures differ from those of the importing merchant only in that the speculator is not interested in an actual delivery of the coffee. He only buys and sells futures and his selling transactions usually involve as a money settlement only the difference between his buying and selling prices. Assume that a speculator instructs his broker to buy two lots or contracts of coffee for March delivery, each lot consisting of 250 bags and each bag weighing 130 pounds, and that the price for Santos 7's coffee, March delivery, is 24.025 cents per pound. To protect the broker's interest, the specula-

tor deposits with him a margin of \$1,000, or \$2 per bag. The broker then instructs his trader on the exchange to purchase two lots of Santos 7's March delivery. If the price of this coffee should drop to 23.775, and the speculator should sell, he would sustain a loss of 25 points, or 25/100 cent per pound, and as each point per lot is equal to \$3.25, a lot being 32,500 pounds, the loss would amount to \$81.25 per lot, or \$162.50 on the two lots. In addition, he would have to pay his broker a commission of \$10 per lot for buying and \$10 per lot for selling.

A method of realizing the day-to-day fluctuations in the market without the necessity of a sale is also a feature of speculation in coffee. At the close of each day the exchange establishes what is called a "settlement price,"[2] by comparison with which the profit or loss for the day on all open transactions is determined. Thus if a speculator buys coffee at, say, 15.2 cents and at the close of the day the settlement price is 14.9 cents he has suffered a loss of 30 points. If now he holds the coffee, and the settlement price on the next day is 15.3 cents, he makes a profit of 40 points for that day. These day-to-day profits or losses are cleared through the Coffee Clearing Association, and the net profit or loss for the day is received from or paid over to the clearing house. Thus, fluctuations of the market are realized daily.

Exchange Transaction Records

In reporting transactions on the exchange, particular forms are used. When one broker makes a sale of coffee to another, the vendor gives the buyer a signed slip or memo of the transaction, showing the names of the parties, place and date of transaction, number of bags of coffee and the kind, the delivery month, and price per pound. The purchasing broker also writes a slip with the same information. They then exchange slips, retaining a copy (the original) for their own information and record. These slips or memos of the purchase and sale transaction, signed by the two brokers, are the basis for making the

[2] This is the last "bid" price before the exchange closes for the day.

NEW YORK,____________________19____

BOUGHT BY______________________________

AND CONTRACTS OFFERED TO NEW YORK COFFEE AND SUGAR CLEARING ASSOCIATION, INC.
FOR CLEARANCE IN ACCORDANCE WITH ITS BY-LAWS AND RULES

FROM WHOM BOUGHT	NO. CONTRACTS	MONTH	PRICE	SETTLING PRICE	DEBIT		CREDIT	
CONTRACT AND POINT TOTALS FORWARD								

Form 7. Bought Sheet

NEW YORK,____________________19____

SOLD BY______________________________

AND CONTRACTS OFFERED TO NEW YORK COFFEE AND SUGAR CLEARING ASSOCIATION, INC.
FOR CLEARANCE IN ACCORDANCE WITH ITS BY-LAWS AND RULES

TO WHOM SOLD	NO. CONTRACTS	MONTH	PRICE	SETTLING PRICE	DEBIT		CREDIT	
CONTRACT AND POINT TOTALS FORWARD								

Form 8. Sold Sheet

daily clearing of profits and losses. For clearing, three forms are used, viz., the bought sheet (Form 7), the sold sheet (Form 8), and the recapitulation statement (Form 9). All bought slips are entered on the bought sheet, and at the close of the day the point profit or loss as compared with the settlement price is extended. All sold slips are entered and extended similarly on the sold sheet.

On the recapitulation statement, in the Carried Over from Yesterday column, are entered the number of contracts for future delivery carried over, that is, not yet closed out by sale, if long or purchase contracts, or by purchase, if short sale contracts. Entry is analyzed in accordance with the month of delivery. Thus all contracts for March delivery are entered on the March line. Both yesterday's and today's settling prices are shown, the difference between which multiplied by the number of contracts carried over from yesterday gives the point gain or loss on the futures for the various months. The total differences on old contracts is shown by the column totals. The debit and credit points from the bought and sold sheets are now entered beneath in the indicated spaces, and the total points on carried over, bought, and sold contracts, are shown and reduced to dollars in the space under the "points" space. The difference between the debit and credit amounts is the amount of money which the broker owes to or has coming from the clearing house for the day. The settlement with the clearing house is made daily after the close of the exchange, the transaction being recorded in the cash book as a debit or credit to an account called "Contract Differences," to be explained fully on pages 376–382.

The profit or loss for the day having now been determined, it is necessary to establish the new position as to "carry overs" for tomorrow's trading. To do this, today's purchases and sales are entered in Today's Trading column, and the net contracts carried over for tomorrow are entered in the column bearing that title. Thus, if a broker carried over from yesterday 20 long January contracts, bought 6 and sold 10 January's today, he would carry over 16 long January's for tomorrow.

RECAPITULATION **STATEMENT OF** ______________________ **TO THE**

New York Coffee and Sugar Clearing Association, Inc.

This Memorandum must be delivered at the office of the Association before 7 p. m. (Saturday 3 p. m.) with check or draft for net balance shown hereon, and also a separate check for original margin if required.

Members filing both Coffee and Sugar sheets must also submit supplementary Statement.

NEW YORK ______________ **192** __

CARRIED OVER FOR TO-MORROW			TO-DAY'S TRADING			CARRIED OVER FROM YEST. DAY			SETTLING PRICE		DEBIT	CREDIT
	COFFEE			COFFEE			COFFEE					
LONG	MONTH	SHORT	BOUGHT	MONTH	SOLD	LONG	MONTH	SHORT	Yesterday	To-day		
	JANUARY			JANUARY			JANUARY					
	FEBRUARY			FEBRUARY			FEBRUARY					
	MARCH			MARCH			MARCH					
	APRIL			APRIL			APRIL					
	MAY			MAY			MAY					
	JUNE			JUNE			JUNE					
	JULY			JULY			JULY					
	AUGUST			AUGUST			AUGUST					
	SEPTEMBER			SEPTEMBER			SEPTEMBER					
	OCTOBER			OCTOBER			OCTOBER					
	NOVEMBER			NOVEMBER			NOVEMBER					
	DECEMBER			DECEMBER			DECEMBER					
	TOTAL			TOTAL			TOTAL		DIFFERENCE ON OLD CONTRACTS			

T/N STOPPED	DUE DATE DELIVERY	T/N ISSUED	ORIGINAL MARGIN MEMORANDUM			MARGIN REQUIRED			DEBIT	CREDIT
			Net Interest	Contracts @				BOUGHT SHEET		
				" "				SOLD SHEET		
	TOTAL			" "				TOTALS { Points / Money		
	PREVIOUSLY	DEPOSITED	Straddle Interest { FACE VALUE $	" "	TOTAL			CREDIT Variation Margin		
			BONDS @ 90 $ / CASH $ / CHECK FOR DEFICIENCY (IF ANY)		}			NET	(CHECK)	(DRAFT)

Form 9. Recapitulation Statement

The Option Records

A coffee-broker who is a member of the exchange may conduct transactions both on his own account and for others, his clients. It has been seen that the only record of these speculative transactions appearing on the general books is that made of the daily settlement of differences through the clearing house. In order to keep track of the transactions carried out for each client and also of those on his own account, a distinct set of records, known as the "option" records, is kept. Some of these are in the nature of memorandum records, while others are controlled by general ledger accounts. The chief of these records are the clients or margin ledger, the option day book or blotter, the option ledger, the options analysis journal, and the option month book.

Trading on the Exchange

Since dealings on the coffee exchange are limited to members only, a speculator, if a non-member, must apply to a member to buy and sell for him. In such transactions coffee-brokers earn a commission of $10 per lot for either buying or selling.

When a customer instructs his broker to buy a certain number of contracts or lots of coffee on the exchange, the broker in his acknowledgment of the order specifies:

1. The number of bags bought for the customer's account and risk, "on the coffee exchange, subject to the by-laws and rules of the said coffee exchange."
2. The number of bags in each month's delivery, i.e., the number of bags for December delivery, March delivery, etc.
3. The base price per pound of each delivery.

The customer confirms the acknowledgment by enclosing a check in amount equal to $2 per bag, as margin. When a receipt for this money is sent to him the amount is credited to his margin account in the clients or margin ledger kept by the option depart-

ment. This customers margin ledger is controlled by a general ledger account, which is credited with this amount when the cash book footings are posted.

The purchase made for the customer is then recorded in the option day book, each page of which is divided into two sections, a seller's and buyer's section, as shown in Form 10. In the seller's

April 3, 19__

Seller	Lots	Month	Fol.	Price	Buyer	Lots	Month	Fol.	Price
Broker C	2	*June*	3	7.80	*Speculator Client*	2	*June*	3	7.80
				April 10					
Speculator	2	*June*	3	7.85	*Broker F*	2	*June*	7	7.85

Form 10. Option Day Book

section are entered the name of the broker from whom the coffee is purchased, the number of contracts bought from each broker, the month each seller expects to deliver, and the price contracted with each. In the buyer's section are entered the name of the client for whom the lots were purchased, number of lots bought, delivery month, and price.

An illustration will make clear the method of handling the option book. Assume that broker B purchases two lots of June coffee at 7.80 from broker C, for the account of a speculator. The name, C, is entered in the first, or seller's section, of the option day book, the number, 2, is entered in the lot column, and

7.80 in the price column. The name of the speculator, the number of lots bought, and the price are also entered in the respective columns of the buyer's section. The date of the transaction is recorded across the two sections above the complete entry.

Purchases and sales of coffee options or futures for the broker's own account are handled in the option day book in the same way as clients' transactions, and posting of them is made in the option ledger.

The Option Ledger

From the option day book the above speculator's entry is posted to the option ledger (Form 11), where an account is kept with each client and broker. The pages in this record are again divided into two sections, each of which contains five columns for date, lot, month, folio, price, and an extra column on each side for recording the number of points gained or lost on the transaction. To complete the first record of the illustrative transaction, the speculator is credited in this book with the purchase of two lots of June coffee at 7.80, while C is debited with two lots at the price per pound. No extensions of the total amounts based on the unit price shown are made, inasmuch as the transaction is speculative and only when or if delivery is made is it necessary to determine the actual amount of money involved based on the weighers' and graders' certificate. (See explanation of exchange deliveries, pages 383–386.)

When the broker sells the coffee contract, upon the instructions of his client, the client's account in the option ledger is debited from the entry of the sale in the option day book. His account now indicates, in points, the profit or loss on each contract. This point difference multiplied by the number of contracts is entered as a memorandum in the marginal column (see Form 11), which now shows the gain or loss on the whole transaction. This "point" profit or loss expressed in money is found by multiplying the number of points gained or lost by $3.25, the

						Speculator							
April	*10*	*2*	*June*	*Fol. 9*	*7.85*		*April*	*3*	*2*	*June*	*Fol. 7*	*7.80*	*10 Pts. Credit Statement 4/10*
						Broker C							
April	*3*	*2*	*June*	*7*	*7.80*								
						Broker F							
							April	*10*	*2*	*June*	*9*	*7.85*	

Form 11. Option Ledger

equivalent of one point in dollars. A statement is then mailed to the client showing:

1. The number of lots bought.
2. The price of each lot and total amount of the lots, expressed in number of points.
3. The number of lots sold and their total price, shown as a deduction from the number of lots bought.
4. The profit or loss both in points and in dollars.

If the transaction shows a gain, the broker deducts his commission therefrom, the result signifying a credit in favor of the client. If the transaction results in a loss, the broker adds his commission thereto.

Entering Exchange Transactions in the Financial Records

The transaction, having now been completed and reduced to a monetary basis, must be reflected in the financial records. When the client deposited margin, at the initiation of the transaction, his account in the clients ledger was credited, this ledger being controlled by the client's account on the general ledger. Now, the results of the completed transaction as shown on the statement rendered the client must be brought into the accounts. In the illustration, the broker is liable to his client for the profit made, less his buying and selling commissions and the stamp taxes. Accordingly, the client's account in the clients ledger will be credited with the net amount of profit accruing to him, the Exchange Commissions account will be credited for the commission earned, the Stamp account credited with the stamps affixed, and Contract Differences will be debited with the gross amount of profit made, i.e., the sum of the three credits. To bring these data into the ledger an options analysis journal is used as shown in Form 12, from which postings are made daily to the various clients' accounts and monthly to the corresponding control and other indicated accounts in the general ledger.

Should the client desire to wind up his account with the broker, the latter must return to him the margin deposited, plus 3% interest for such time as the broker had the money in his possession, plus the net profit on his trades or minus the loss.

Nature of Contract Differences Account

It is necessary now to show the relation of the Contract Differences account to the settlement with the client. As explained above, this account records the daily profits or losses made as exhibited by the daily recapitulation statement or settlement sheet with the exchange. Profits and losses are entered in this account daily and are, therefore, cumulative, each day's profit or loss on "carry over" contracts being figured, not on the original purchase price but on yesterday's settlement price and the profit or loss on new contracts, i.e., the day's purchase and

Date	Customer	Option				Folio	Customers		Option Trading		Contract Difference		Stamp Tax	Commision
		No. of Contract	Month	Price	Taxable Value		Dr.	Cr.	Dr.	Cr.	Dr.	Cr.		
April 10	*Speculator*	*2*	*June*	*7.85*	*$ 2552*	*8*		*11 98*			*32 50*		*52*	*20 —*

Form 12. Options Analysis Journal

sales being the difference between the purchase or sale price and the day's settlement price. Thus upon the completion of an option transaction a clear and continuous line of profit or loss taken is traceable from sales price back to purchase price, the daily profits and losses as recorded in Contract Differences account accumulating to the difference between original purchase and final sales price.

An illustration will make this clear. Suppose a broker buys for a client an option of 3 lots of coffee at 8 cents on January 3 and sells it on January 8 at 8.60 cents and that the daily settlement prices have been as follows: January 3, 8.10 cents; January 4, 8.30 cents; January 5, 8.15 cents; January 6, 7.90 cents; January 7, 8.40 cents; and January 8, 8.55 cents. To avoid needless calculation, the entries are in "points" although, of course, points are always reduced to dollars before entry on the financial records. The Contract Differences account would show as follows, covering this one transaction:

Contract Differences

Jan. 5	3 lots at 15 points	45	Jan. 3	3 lots at 10 points	30
6	3 " " 25 "	75	4	3 " " 20 "	60
			7	3 " " 50 "	150
		120	8	3 " " 15 "	45
				3 " " 5 "	15
					300

All of these entries come from the recapitulation statement. The first credit entry of 30 points is based on the bought sheet record; the last credit entry of 15 points is based on the sold sheet, and all of the others, debit and credit, are based on the Carried Over from Yesterday column of the recapitulation sheet. The balance of the account shows a profit of 180 points. This is the difference on the 3-lot option bought at 8 cents and sold at 8.60 cents. This profit, now that the option contract is complete, belongs to the client and is transferred, less commission, through

entry in the analysis journal. as explained above, to his account in the clients ledger.

The Contract Differences account is thus seen to be the depository of the daily profits and losses on exchange transactions and arises out of the custom of daily settlements. In this account are entered both the transactions for clients and those for the broker on his own account. Upon the completion of contracts, the accumulated profit or loss is transferred either to the client's account, if a client's contract, or to the Option Trading account, if the broker's own contract. The form of options analysis journal illustrated makes provision both for clients' transactions and for the broker's own dealings. Provision is also made for showing the basis of the stamp tax. The Revenue Act levies a tax of 2 cents on every $100 (and fraction thereof) of value of all sales of futures "at or under the rules or usage of any exchange." Stamps affixed to clients' sales are charged to the client, those for the broker's own sales are charged to Option Trading account, which is a profit and loss account affecting the broker's income.

Contract Differences at the Close of Fiscal Period

The proper treatment of Contract Differences account at the closing of the books presents some interesting phases. Only when option contracts have been completed are the profits and losses on trading transferred to clients' accounts (showing there as liabilities of the broker to his clients for profits made or asset claims against the clients for losses sustained), or to the Option Trading account if representing the broker's own profits or losses. At any given time, then, the balance of the Contract Differences account represents the accumulated day-to-day results as to profits and losses on open (i.e., uncompleted) option transactions. This balance represents items belonging both to clients and to the broker. For closing the books it is therefore necessary to analyze the account in order to provide a basis for its proper treatment. An analysis of the open options as shown

either in the option ledger or, more conveniently, in the option month book is necessary. The profits and losses belonging to clients, determined on the basis of the difference between the purchase price of options and the last day's settlement price, will be the liability or asset item to be shown on the balance sheet in connection with the clients' accounts. The rest of the Contract Differences balance, after taking effect of the clients' portion, is, of course, the broker's own profit or loss and will be reflected in his Profit and Loss account of that year. The correctness of this amount should be proved against his own open options shown by the books.

A nice point of theory is involved as to the propriety of taking into the accounts the profits and losses on open options. So far as the profits and losses belonging to clients are concerned, no serious objection can be made against the practice. It results in placing the broker's liabilities to clients and his claims against them on a liquidation basis at the exchange settlement price at the close of the year. On the other hand, strict conservatism might seem to demand that the broker's own profits and losses on option trading be not taken until the option is sold. That position rests on a basic principle of accounting and finance, viz., not to take profit until completion of a contract. The situation is somewhat different, however, from that met in the case of the usual open contract in other lines of business. The custom of the trade has here built up a method by which daily accruals of what would ordinarily be termed "book" or "speculative" profits are turned into cash and are, therefore, realized. This makes it possible to disregard the status of the contract as an open contract and to apply to each day the profits or losses realized on that day's trading in options.

At the end of the fiscal period, the Contract Differences account should not have closed out into Profit and Loss the portion representing the broker's own profits or losses, since that account controls, or represents on the general ledger, the status of all open options, both clients' and own, which will be carried over into the new year. The student should work out the book-

keeping procedure needed to take care of this adjustment so that the recording of all daily settlements with the exchange may follow an established routine. Postings to the Contract Differences account are made from the cash book for the daily payments to or receipts from the exchange, and from the option analysis journal for the transfers to clients' and option trading accounts.

Monthly Proof of Contract Differences Account

In addition to the method of proof of this account explained above as necessary at the close of the fiscal period, a test is taken monthly (or oftener) to prove that all profits or losses belonging to clients for closed transactions have been transferred to their accounts. In other words, the test proves the correctness of the clients ledger and also the option ledger for this group of transactions. A short illustration will make this clear. Suppose the Contract Differences account shows a balance of $130 debit at the end of March; that the option ledger—or month book—shows the following open options: A bought at 9.10, B at 10.15, C at 7.90, D at 8.15, and the broker himself 4 lots at 7.60, 9.40, 8.50, and 8.40 respectively; and that the settlement price for March 31 is 8.35. It is assumed for simplicity of illustration that all of the above options are for the same delivery month and the same grade of coffee. The following method of test is used:

Purchases:					
1 lot at	9.10	=	910	lot	points
1 " "	10.15	=	1,015	"	"
1 " "	7.90	=	790	"	"
1 " "	8.15	=	815	"	"
1 " "	7.60	=	760	"	"
1 " "	7.40	=	740	"	"
1 " "	8.50	=	850	"	"
1 " "	8.40	=	840	"	"
			6,720	"	"
Settlement Price:					
8 lots at	8.35	=	6,680	"	"
Loss			40	"	"

This loss of 40 lot points reduced to dollars at $3.25 per point gives $130, thus proving the correctness of the Contract Differences account. The student will note that this obviates finding the profit or loss on each open option.

Option Month Book

The broker keeps track of future deliveries in exchange transactions, so that he may know how many lots he has contracted to receive or to deliver, in an option month book, one page of which is shown in Form 13. The book is divided by means of tabs into twelve divisions to correspond with the number of

JUNE

Date	Seller	Fol.	Price	Date	Buyer	Fol.	Price
April 3	*Broker C*	3	7.80				
	" C	3	7.80				
~~*April 10*~~	~~*Speculator*~~	~~3~~	~~7.85~~	~~*April 3*~~	~~*Speculator*~~	~~3~~	~~7.80~~
	~~"~~	~~3~~	~~7.85~~	~~3~~	~~"~~	~~3~~	~~7.80~~
				April 10	*Broker F*	5	7.85
					" F	5	7.85

Form 13. Option Month Book

delivery months, and is somewhat similar to the exchange delivery book. Each page shows a seller's and a buyer's section in which are entered the date of the transaction, the names, and the price per pound. Using the previous transactions for illustration, when B buys two contracts of June coffee from broker C for the account of the speculator at 7.80, the entries are made on the June page as shown in Form 13.

It should be noted that: (1) each contract is entered on one line, no matter if both are purchased from the same broker, and that (2) the client's part of the transaction recorded to the right appears on the next line beneath the last entry made in the seller's section. As the record now stands, the broker can easily see how many lots must be delivered, what month delivery is to be made, by whom the coffee is to be sent, and by whom accepted.

In terms of the exchange, the speculator is "long of the market." If the price advances 5 points, and the speculator wishes to dispose of his "longs," he instructs his broker to sell. An entry is then made on the lines opposite the entries made in the buyer's section, recording the speculator as the seller, while the name of the purchaser is entered in the buyer's section under the entry made to record the speculator's purchase. A red line is then drawn across the two sections at the time the last entry is made, showing that the transaction has been completed. The line also shows that the speculator has to deliver two lots of June coffee to another individual, and when broker C notifies broker B that he is ready to make delivery, B can easily ascertain to whom the coffee should be sent, inasmuch as the open lines in the seller's section will indicate this.

Delivery of Coffee on an Exchange Transaction

While dealings in futures are usually speculative and do not contemplate delivery, the broker may at times desire to make delivery. If so he must give the buyer notice of his intention to deliver 5 days before the first of the month in which delivery is to be made. It often happens that the broker who originally made the purchase may in the meantime have closed out his transaction, i.e., he may have sold his contract to another broker. When the original purchaser receives notice of delivery, he indorses the notice over to the party who, in the language of the Street, "took his end," i.e., the one to whom he transferred his right to receive the coffee, until finally the rightful purchaser is located. In the meantime the original vendor, before knowing

who is to receive the coffee, prepares two lots of 250 bags each, or thereabouts, for delivery, by having them weighed and graded by licensed weighers in compliance with the rules of the New York Coffee and Sugar Exchange. Application is then made to the warehouses for negotiable receipts so that the coffee may be transferred.

Method of Making Delivery

In making delivery a sampling order for each lot must first be given to the receiving party. A certificate of weights is issued by the weighers, and a certificate of grades, signed by the graders, is issued by the exchange. In every case these weighers and graders must be licensed by the exchange. The certificate of grade, quality, and condition contains the following information:

1. Number of bags.
2. Name of person delivering, and name of original person receiving.
3. Marks and chop numbers.
4. Quantity.
5. Grade of coffee.

If an arbitrator has also graded the coffee, his findings are listed apart from the grader's findings according to mark and chop numbers, quantity and grade. The total number of chops, total quantity, and average grade, as stated by the graders, or, in the case of arbitration, by the arbitrators, are then shown at the bottom of the certificate. The superintendent of the exchange places his signature underneath this information, certifying to the fact that the graders and arbitrators have been appointed by the exchange.

When the weighing and grading certificates are received, they are attached to the warehouse receipt, by means of which title to the contracted coffee is transferred to the buyer, and an invoice is rendered.

The completion of delivery is recorded by the vendor in the exchange delivery book. Each lot consisting of 250 bags is

entered separately, no matter if two or more lots have been sold to the same customer. Form 14 shows the method of entry.

April 25, 19—						
(Name of Party to receive)						
250 HR	Bags	Rio	Lot 756			
S	8	26	3,392	Portuguese Pr. 815 R/32		
	10	76	9,916			
T	3	21	2,744			
	6	71	9,312			
	8	56	7,320			
			32,684			
			332			
			32,352	@ 9.3328¢	3,019	.25
Basis No. 7			7.05¢			
Av. Grade			2 — 2172			
Price			9.3328¢			
250 HR	Bags	Rio	Lot 757			
S	8	15	1,972	Portuguese Pr. 815 R/32		
	18	25	3,232			
	26	40	5,124			
	28	50	6,568			
B	3	43	5,572	Asiatic Pr. 828 R/31		
	4	31	4,024			
	12	14	1,824			
	14	32	4,196			
			32,512			
			332			
			32,180	@ 9.1926¢	2,958	.18
Basis No. 7			7.05¢			
Av. Grade			3 + 1426			
Price			9.1926¢			

Form 14. Exchange Delivery Book

This book is really an old-fashioned sales journal. As each lot is entered, the customer's account is debited, while at the end of the month the Accounts Receivable controlling account is debited and Exchange Deliveries or Sales account credited. It should be noted that the sales made on the exchange are, for statistical purposes, kept separate from those made by the sales department.

The reader will see that a client who has bought a future can demand delivery of it, but he can never make delivery of it on a sale through the broker, because as soon as he sells, the transaction passes out of the records of the broker. If he has sold short, he may make delivery from his own stock, but if he buys to cover, the transaction passes out of the records.

Joint-Exchange Transactions

Joint-venture transactions are frequently entered into either between members of the exchange or between a member and non-members. If such ventures are numerous a joint-venture ledger is used controlled by an account on the general ledger. The general principles of joint-venture accounting govern the method of recording these transactions. To reach the general books, these transactions on the exchange will, of course, clear through the Contract Differences account.

III. Roasting, Jobbing, and Retailing

Organization of Business

To prepare green coffee for consumption, it must be roasted. The process is simple, but the equipment necessary ranges from the oven pan of the housewife who does her own roasting to the elaborate roasting ovens and automatic grinding, weighing, and packing devices of the modern commercial roaster. Many fine points of the trade are not apparent to the outsider, both as to methods used and also as to the niceties of judgment necessary in determining how far the roasting process must proceed to secure the finest flavor, and how best to preserve it in the package.

Roasting is not usually carried on as a separate business, being in most cases one department of a general coffee business. One concern may buy its green coffee, roast it, and sell it to a jobber, while another may sell its roasted coffee direct to the consumer by means of a store or a traveling market. The large roaster may not only roast for himself but also for the smaller merchant who does not have a roasting plant. Roasted coffee may be a department in a wholesale grocery business. The retail merchant dealing in coffee seldom limits his trade to this one commodity. He may, in addition, deal in teas, spices, extracts, baking powders, rice, sugar, nuts, candies, etc. It will be seen, therefore, that the determination of cost of doing business and prorating it over the various commodities handled is the chief problem in connection with the retail coffee business. Where roasting, also, is carried on, a knowledge of roasting costs is essential as a guide both in connection with the roaster's own costs and in connection with fixing a price for trade roasting.

Roasting Costs

The cost of the roasted coffee includes both the cost of the green coffee and the expense of roasting it. The roasting expense factor is fairly constant, whereas the cost of the green coffee entering into the roast is variable according to the grade used and according to market conditions. It should be noted also that the shrinkage caused by the roasting is an important cost which should not be overlooked. While many factors enter into this, such as the age of the coffee (it being drier with age), condition of climate and storage as to moisture, etc., so that there cannot be a uniform standard of shrinkage, the customary figure used by the trade is 16%. One pound of green coffee comes out of the roasters, therefore, as .84 pounds of roasted product. A loss in weight of 16% is a very considerable factor of cost. A roaster should make periodic weight tests to determine what his shrinkage loss is, weighing the coffee before and after roasting.

The expenses of roasting consist of direct labor and overhead.

The roasting labor costs consist of the wages of the roasters and helpers engaged in the process of roasting and also of the wages of floor truckmen and helpers moving the green coffee from the storeroom on the premises to the roasters or to the elevators. This labor cost should not include the wages of any men, helpers, floor truckmen, and packers engaged in bagging, grinding, moving, or packing the roasted coffee.

The overhead expense or burden consists of the following:

1. Superintendence
2. Power
3. Lighting and heat
4. Fuel and supplies
5. Machinery and equipment repairs and maintenance
6. Depreciation of machinery and equipment
7. Building expense (exclusive of depreciation)
8. Depreciation of building
9. Insurance
10. Rent
11. Sundry roasting expense

At the close of a month or other period, the accurate segregation of roasting expenses compared with the record of pounds of roasted coffee taken from the roaster makes possible a determination of each of the elements of expense on a per pound basis. If, in addition to this, a record is kept of the idle time of the roasting ovens, valuable comparisons of month-to-month operations can be made.

Grinding and Packing Expense

More and more, coffee is being sold to the consumer in made-up packages and in ground form. The coffee merchant who prepares his own coffee for the trade must include in his cost of goods sold all costs up to the point of putting the commodity in salable condition. If he sells the roasted bean in packages or ground and in package, the expenses of grinding and packing must be added

to the cost of the green berry plus the roasting expenses in order to determine full cost. These expenses include not only the cost of containers and supplies used in packing, but also the labor employed in this process. In addition the following overhead or burden will be added:

1. Grinding and packing superintendence
2. Power, lighting, and heat
3. Machinery and equipment repairs and maintenance
4. Depreciation of machinery and equipment
5. Building expense (exclusive of depreciation)
6. Depreciation of building
7. Insurance
8. Rent
9. Sundry other expenses

For comparative purposes these costs should also be reduced to a per pound basis.

Overhead Expenses and Their Distribution

Except in the largest roasting plants, it is seldom possible to make physical segregation of the various elements of roasting and grinding and packing costs. The two lists of these elements given above are intended as indicative of the items to be considered in an accurate determination of costs rather than as account titles carried on the ledger. In practice one more often finds just two accounts, viz., Roasting Expense, and Grinding and Packing Expense. The size of the business and the information needed must govern the degree of analysis secured by the accounts. Even where a somewhat detailed analysis is made, many costs applicable both to roasting and to grinding and packing are currently booked in the one account and distributed periodically to the two processes. For example, where the same employees are used on both processes, only one account would be opened for labor, the charge being allocated periodically partly to roasting, and partly to grinding and packing, according

to the distribution of effort in these processes. The same is done in connection with the superintendence charge.

The portion of the power charge distributed to roasting includes all charges incurred for the use of power, in operating all machines, elevators, etc., for moving the green coffee to the roasters and in operating all polishing, sorting, or sizing and blending machines. It also includes all charges for electrical inspection, meter rentals, and other sundry electrical charges. The power charge distributed to grinding and packing includes that portion of the expense which is incurred for the purpose of executing such operations.

The customary bases are used for the distribution of light, heat, depreciation, etc.

The fuel and supplies expense consists of the cost of the fuel (gas, electricity, or coal) consumed in the process of roasting.

The charge for containers and supplies regarded as a grinding and packing cost represents the cost of all containers for the packing of ground coffee, paper bags, pasteboard cartons, tin cartons, etc., and all supplies in connection with the above, such as paper linings, labels, wrappers, glue, paint, etc.

Proper Treatment of Insurance

When roasting is done in the same building in which the selling and administrative offices are located, the premium on the insurance for the building is higher than in the case where the roasting is done in a separate building. For this reason the coffee merchant maintains that the roasting process should be burdened with the extra cost. This is in accord with correct accounting practice, but such extra charge should not be lumped with the normal amount of insurance but should be shown as an additional cost of roasting. For example, assume that three-quarters of the building are devoted to general uses, warehouse, sales, office, etc., and one-quarter is occupied by the roasting department; that the insurance premium is $800; and that if the roasting department did not occupy its portion of the building, the insurance premium

would amount to \$400. Manifestly, \$300 (3/4 of \$400) is the proper charge of the other departments and roasting should bear \$500 insurance cost. This cost should be shown in two items, viz., normal insurance, \$200 (1/4 of \$800), and additional insurance due to roasting, \$300, this latter item being shown as in Schedule B-1a, page 394, in order to segregate this from the normal cost items.

Roasting for the Trade

It is practically impossible for a roaster to segregate the cost of roasting coffee for others from the cost of roasting his own coffee. Therefore, to determine these costs, the total cost of all roasting is first determined and it is divided by the total number of pounds roasted during the same period. This gives a per pound cost, which multiplied by the number of pounds roasted for the trade gives the cost of the service charge made to others for roasting. This compared with that charge, i.e., the "trade roasting income," shows the gross profit or loss earned on it.

Departmentization and Its Importance

Since the retail coffee business usually deals in a number of commodities besides coffee, wherever possible it is valuable as a means of control to departmentize the results of the business. Only in this way can sales effort be properly directed and the relative value of the various departments be determined. For making the record by departments, sales will be analyzed by means of the sales ticket, a different color or number being used for each department. Purchases must, of course, be analyzed on the same basis. For a business dealing in green as well as roasted coffee and various other commodities, the departmentization shown in the following forms will usually suffice. These comprise a typical profit and loss statement, with supporting schedules for cost of goods sold, cost of roasting, and grinding and packing costs. The student should note how the cost of green coffee transferred to roasting is handled and also the distribution of roasting costs between cost of roasted coffee sales and cost of trade roasting income.

Exhibit B

The X Y Z Corporation

Statement of Profit and Loss

For Year Ending December 31, 19–

	Roasted Coffee	Green Coffee	Tea	Spices and Extracts	Trade Roasting	Total
Sales	$750,000	$900,000	$75,000	$45,000	$30,000	$1,800,000
Less—Returns and Allowances	37,500	21,000	4,500	3,000	....	66,000
Net Sales	$712,500	$879,000	$70,500	$42,000	$30,000	$1,734,000
Cost of Goods Sold (See Schedules B–1 & B–1a)	593,954	756,900	47,850	39,000	24,000	1,461,704
Gross Profit	$118,546	$122,100	$22,650	$ 3,000	$ 6,000	$272,296

Selling Expenses:				
Salesmen's Salaries, Commission, and Bonus		$45,000		
Salesmen's Traveling and Other Expenses		7,500		
Delivery Expenses		24,400		
Sundry Selling Expense		5,000		
Advertising		9,600	$91,500	
General Administrative Expenses:				
Management and Office Salaries		$33,825		
Office Supplies and Postage		1,500		
Sundry Office Expense		5,000		
Light and Heat (Except for Roasting)		2,600		
Repairs and Maintenance (Except for Roasting)		2,500		
Depreciation (Except for Roasting)		3,500		
Insurance (Except for Roasting)		650		
Taxes (Except Federal Income and Excess Profits)		3,250	52,825	
Financial Management Expense and Income:				
Sales Discount	$15,500			
Credits and Collection Expense	7,500			
Bad Debts	8,700			
Interest Cost	2,250	$33,950		
Deduct:				
Purchase Discount	$12,900			
Interest Income	1,325	14,225		
Net Financial Management Expense			19,725	
Total Operating Expense				164,050
Net Operating Profit				$108,246

Schedule B–1

The X Y Z Corporation

Statement of Cost of Goods Sold

For Year Ending December 31, 19—

	Roasted Coffee	Green Coffee	Tea	Spices and Extracts	Total
Inventory, January 1, 19—	$ 45,000.00	$ 144,000.00	$ 3,000.00	$ 2,925.00	$ 194,925.00
Purchases		1,212,000.00	45,675.00	38,400.00	1,296,075.00
Green Coffee from the Roasting Department	559,650.00				559,650.00
Roasting Costs (See Schedule B-1a)	8,000.00				8,000.00
Grinding and Packing Costs (See Schedule B-1b)	13,014.00				13,014.00
Inward Freights and Cartage	17,100.00	20,700.00	1,200.00	1,110.00	40,110.00
Brokerage, Insurance, Storage	2,250.00	2,100.00	450.00	360.00	5,160.00
Other Buying Expense	2,940.00	3,600 00	525.00	255.00	7,320.00
Total	$647,954.00	$1,382,400.00	$50,850.00	$43,050.00	$2,124,254.00
Deduct:					
Purchases Returns and Allowances	$ 4,500.00	$ 5,850.00	$ 300.00	$ 450.00	$ 11,100.00
Transferred to Roasting Department		559,650.00			559,650.00
Inventory, December 31, 19—	49,500.00	60,000.00	2,700.00	3,600.00	115,800.00
Total	$ 54,000.00	$ 625,500.00	$ 3,000.00	$ 4,050.00	$ 686,550.00
Cost of Goods Sold	$593,954.00	$ 756,900.00	$47,850.00	$39,000.00	$1,437,704.00

Schedule B–1a
The X Y Z Corporation
Cost of Roasting
For Period Ending December 31, 19—

			Cents per Roasted Pound	
Roasting Superintendence........	$ 4.800.00		.072	
Roasting Labor.................	12,000.00		.181	
Power..........................	3,000.00		.045	
Lighting.......................	585.00		.009	
Fuel...........................	2,500.00		.038	
Machinery and Equipment Repairs and Maintenance..............	1,365.00		.021	
Building Expense (Exclusive of Depreciation)...................	1,650.00		.025	
Depreciation of Building.........	1,320.00		.020	
Depreciation of Machinery and Equipment..................	3,450.00		.052	
Insurance......................	75.00		.001	
Sundry Other Expenses..........	1,100.00	$31,845.00	.016	.480
Additional Insurance due to Roasting.........		155.00		.002
Cost of Roasting 6,639,004 lb...............		$32,000.00		.482

Own Coffee Roasted.....	1,659.751 lb.		
Trade Coffee Roasted...	4,979.253 "		
Cost of Trade Roasting (Carried to Exhibit B) (4,979,253 × .482¢).......		$24,000.00	
Cost of Roasted Coffee (Carried to Schedule B–1) (1,659,751 × .482¢)..		8,000.00	$32,000.00

Schedule B–1b
The X Y Z Corporation
Schedule of Grinding and Packing Costs
For Year Ending December 31, 19—

Superintendence.............................	$ 400.00
Labor..	2,000.00
Containers and Supplies.....................	9,500.00
Power and Lighting..........................	350.00
Machinery and Equipment Repairs and Maintenance	135.00

Depreciation of Machinery	185.00
Building Expense	165.00
Depreciation of Building	124.00
Insurance	30.00
Sundry Other Expense	125.00
Total	$13,014.00

Price Determination

While, in the final analysis of a free market, prices are determined by the laws of demand and supply, every merchant should know what is the approximate cost of a commodity in order to determine and fix the price at which he can afford to sell it. For a commodity in which price fluctuations are frequent and it seems desirable or necessary to take cognizance of replacement cost of his stock-in-trade, an accurate knowledge of current costs as compared with past costs is absolutely essential. Only by this means is it possible in periods of market readjustment to guide intelligently the operations of a business. For this purpose, the following schedule indicates what may be done. If the data have been accurately compiled, as detailed a statement as desirable may be made.

PRICE NECESSARY TO COVER

Cost of Green Coffee (¢ per lb.)	Shrinkage in Roasting 16%	Roasting Costs 50¢ per 100 lbs.	Grinding & Packing Costs 25¢ per 100 lbs.	Selling Expenses 10% of Sales	General Administrative Expenses 7% of Sales	Fair Profit 3% of Sales (Sales Price)
6	7.15	7.65	7.90	8.8875	9.5788	9.875
6½	7.74	8.24	8.49	9.5513	10.2942	10.613
7	8.33	8.83	9.08	10.215	11.0095	11.35
7½	8.93	9.43	9.68	10.89	11.737	12.1
8	9.52	10.02	10.27	11.5538	12.4524	12.8375
9	10.71	11.21	11.46	12.8925	13.8953	14.3251
10	11.90	12.40	12.65	14.2313	15.3382	15.8126

Each column carries the price, based on the per pound price of green coffee, necessary to take care of the item of cost shown in the column title.

CHAPTER XI

PRINCIPLES OF DEPARTMENT STORE ACCOUNTING

BY P. E. BACAS

Development of the Department Store

A department store is a combination of a number of individual stores or selling organizations called "departments" under one roof and a single management. The development of the department store to the size attained by the big modern organizations is a natural growth following the expansion in means of production and exchange. The bigger the city, the bigger and more numerous, as a rule, are its department stores. A retail merchant opens a store or two handling a few lines, and if his store is centrally located and he proves a capable man of business, sooner or later the possibilities of expansion suggest themselves and in this way the department store grows. From such small beginnings as these have sprung our best known and largest department stores.

Organization

The departments and the store management can be compared to our state and national governments. To the departments are delegated duties in connection with the buying and selling of merchandise and to a certain extent its display. The management retains the administration of such matters as are common to the business as a whole, such as:

1. Maintenance and operation of the plant.
2. Receiving and delivering the merchandise.
3. Advertising and publicity.

4. Supervision of the departmental activities as a whole.
5. Financing.
6. Accounting.

The organization of the executive departments depends largely on the capabilities of the owners of the store or their deputies. The combination of duties performed by certain executives or the variety of the merchandise handled by a department in many cases is determined by the ability and the qualifications of the employee entrusted with the duties and responsibilities. As a general rule, however, the administration is divided into the three groups of:

1. Merchandising and publicity.
2. Maintenance and operation of plant and equipment.
3. Financing and accounting.

The executive in charge of the first group of activities is responsible for the functions of buying, selling, displaying, and advertising.

The executive in charge of the maintenance and operation of the plant and equipment may also supervise the employment of the help and in a large establishment he organizes the personnel or welfare work.

The executive responsible for the third group of activities takes care of the financing, the controlling and recording of the receipts and disbursements, and the recording of merchandise transactions.

Financing

Though some large department stores are operated as sole proprietorships or partnerships, the majority are carried on under the corporate form of organization. Such corporations, in practically every case, have been organized to take over either a sole proprietorship or a partnership business and seldom if ever to operate a new department store for which an entire stock of merchandise must be purchased.

The capital of the department store generally consists of common and preferred stocks, though in a few cases bonds have been issued. Notwithstanding the fact that there are hundreds of large department stores in this country, the securities are closely held by the corporate owners and only a few stores are included in the active list of the principal stock exchanges. If the management is sound and conservative a fairly large credit accommodation can be obtained from the local banks for the purpose of financing the seasonal purchases, which are generally the heaviest in the early fall. As the bulk of a department store's assets are current, consisting as they do of cash, accounts receivable, and inventories, the financial statements usually meet the chief requirement of a bank from its borrowers, viz.: that the current assets, in amount, shall be at least double the current liabilities. The fulfilment of this condition, coupled with the fact that the accounts receivable and the inventories can be readily converted into cash, places the ably managed department store well towards the top of the list of borrowers to whom the banks give preference.

Sales Records—The Sales Slip

In recording sales the common practice is to make the first or original entry in duplicate or triplicate on perforated sales sheets bound in a sales book in sets of fifty except where cash sales are recorded on cash registers. The modern type of register used in many stores prints a slip giving the serial number of the sale, the name or number of the department and of the sales person, and the amount of the sale. By the use of separate drawers, and separate recording and adding devices in the cash register, the sales of as many as six salespersons can be segregated. Only on alternate or every third day are the same sales books used, in order that the auditing department may abstract the entries during the one or two days intervening.

The sales slip prepared for a charge or C.O.D. sale contains the following information:

Serial number
Department number or letter
Salesperson's number
Date
Name and address of customer
Description of article, including price and amount
Name of the person making the purchase, where the purchase is made on the customer's order

One copy of the sales slip is placed in the package to be taken by or delivered to the customer, the second copy goes to the central cashier or the charge desk, and the third, where a triplicate is prepared, remains in the sales book. A tally card, which is a summary of the daily sales, with columns for the amount of the cash, charge, and C.O.D. sales, is generally prepared by each salesperson. This card is taken up with the sales list at the close of the day. Where cash registers are not in use, the money received by each salesperson is transmitted to a central cashier by means of pneumatic tubes or in little overhead metal carriers. In a large establishment the head cashier has under him a number of assistants, each of whom is designated by a number or letter, and is in charge of the receipts of a section of the store. The assistant's number or letter is stamped on each sales slip handled by him. At the beginning of the day he is provided with a fixed change fund and at the end of the day he turns in the day's receipts and the fund received for making change. A record is then prepared of the total received from each cashier, which total is proved with the amount of the sales slips he has handled.

At regular intervals—in some stores as frequently as six times daily—the copies of the sales slips are sent to the sales audit department to be summarized as to cash, charge, or C.O.D. sales. Many large establishments know a few minutes after the closing hour the total of the day's business, this total being, of course, subject to minor adjustments for missing sales slips, correction of errors, etc.

The sales slips are summarized by departments with subtotals for the salespersons. The subtotals are proved with the tally sheets, where these are prepared; otherwise with the total sales shown on the third copies of each clerk's sales slip. While making this proof it is customary to account for the serial numbers printed on the sales slips, any missing sales slips being listed and traced or the reason for their disappearance investigated.

Sales, Subject to Alteration of the Goods

When the goods sold are to be delivered at a later date, as when alterations are made before delivery, it is customary, if the customer does not have a charge account, to request a deposit at the time of making the sale. The audit of the sales slips must include a segregation and a summary of such deposits. The deposits are recorded in a ledger account, which is treated as a deposit liability until the sale is completed, at which time a sales slip is made out for the entire transaction.

C.O.D. Sales

It is the duty of the sales audit department not only to prepare totals of the sales by departments and by salespersons, but to prove the summary of the sales slips with the cash received for cash sales and the entries made in the C.O.D. records for the C.O.D. sales. The accounting for the C.O.D. sales in establishments where such sales are numerous, requires the observance of a definite procedure. If collections were invariably made at the time of the delivery of the goods, which is usually on the day following the sale, no difficulty would arise. Some of the C.O.D. items, however, may not be collected for several days, others may be transferred to charge accounts, and others again may be canceled through the return of the merchandise to stock.

It is not customary to open ledger accounts for C.O.D. transactions. Instead, individual columnar books are used to record these items either alphabetically or numerically (if such sales are numbered consecutively). These books are ruled with

columns to indicate how settlement is made. Periodically, and as a rule at the close of each month, the open items are listed and the aggregate is proved with the general ledger control account. In many stores the C.O.D. records are seldom in balance, due in some cases to the fact that the keeping of the records is a part of the work of a receiving or delivery clerk and is sacrificed to his principal duties. Notwithstanding this fact the C.O.D. records are generally kept in the delivery department so that the drivers can readily secure information and make reports.

Billing Accounts Receivable

The charge accounts of a department store are handled in practically the same manner as those of any mercantile establishment. The well-managed department stores, however, organize their billing departments so that all invoices covering the sales of the entire month are in the mail by midnight of the last day of the month. In some stores bookkeeping machines are used to prepare the invoices and ledger sheets in one operation. By means of tabulating devices these machines make possible a daily proof of the items entered on the invoice and sheets and thus insure the automatic balancing of the ledgers with the controls at the close of the month.

Cash Records

The majority of the cash receipts come from the following principal sources:

1. Cash sales
2. Collections of customers' accounts receivable
3. Collection of C.O.D. sales

Miscellaneous receipts may come from many sources, ranging from the sale of drinking cups and the income from weighing machines to the operation of a post-office and interest earned on notes receivable.

The handling of these miscellaneous items of income does not raise any accounting problems which are difficult to solve.

The general cash records are very simple. Receipts and disbursements are kept on separate sheets. In the larger stores the receiving cashiers keep the record of the cash received from accounts receivable separate from that of items going into the general ledger by preparing separate blotters for it, divided into sections to facilitate posting to the various ledgers. In other establishments the receipts from accounts receivable are recorded in duplicate on cash slips or tickets, one for each item as received. After the daily proof, the slips for the accounts receivable ledgers are separated from those for the general ledger, the slips for the accounts receivable ledgers being sent to the bookkeeping machine operators to be typed, while those for the general ledger items are sent to the cashier to be entered in the cash receipts books in detail. Only the totals of the day's cash sales and the collections of accounts receivable are entered in the cash receipts book.

The cash disbursements representing settlements of accounts payable are usually summarized in sections corresponding with the accounts payable ledger controls. These disbursements are taken from duplicate loose-leaf check stubs which when filed are a part of the cash records. The miscellaneous disbursements are either recorded on a separate series of duplicate loose-leaf check stubs or noted in a sundry column on the check stub, if the stub used is of the same series as that for the accounts payable checks. The daily totals of the accounts payable checks and the details of the other checks are entered in the general cash disbursements book.

Departmental Merchandise Accounts

Special consideration must be given to the records of the merchandise purchases, as the figures prepared from these records give the information which enables the management to know in advance whether the merchandise purchased will yield sufficient gross profit if sold at the marked prices. The cost of purchases

figures entered on these records are automatically proved, being offset by credits of equal amount to accounts payable. The selling figures, however, have no offsetting entries, and therefore they require close checking to determine their accuracy. As an error of a slight amount in the unit selling price may materially affect the book inventory of a department, it is highly important to extend and summarize correctly the figures placed on the invoices to represent the selling prices.

The invoices covering merchandise purchases, after being checked by the receiving department, are sent to the buyer for his approval. The buyer marks next to each lot the unit sales price, which is subsequently entered on the tag attached to the merchandise. The invoices are then sent to the accounting department where extensions of the selling prices are made in red ink and the extensions of the cost prices and the footings of the invoices, both as to cost and selling, are verified. The invoices are entered either on a columnar record showing the cost and selling price, freight, and miscellaneous charges for each department, or on separate sheets for each department. From this record monthly figures are compiled showing the purchases of each department.

" Retail " System of Pricing Inventories

The inventory records of a department store are prepared in accordance with a method commonly referred to as the "retail system." In the operation of this system the inventory prices are obtained by deducting from the marked selling prices a percentage referred to as the "mark-on," or "mark-up." The "mark-on" is secured by dividing the total of the selling prices of the merchandise available for sale during a given period into the total of the amounts added to the cost prices of such merchandise to make up the marked selling price. The percentage thus figured will here be referred to as "mark-on." The method of figuring this mark-on is outlined and illustrated in more detail in the following pages.

The expression "mark-up" is generally used to designate the amount added to the current selling price to make it conform to the enhanced market value of similar merchandise. The "mark-down" is the amount deducted from the current selling price of an article for the purpose of reducing the selling price to the existing market or for the purpose of clearing out merchandise purchased for sale in previous seasons. With these definitions in mind, it can be seen that it is preferable to restrict the use of the expression "mark-up" to the increases of marked selling prices.

A consideration of the unusual business conditions prevailing during the years 1918 to 1921 inclusive, will make apparent some of the merits of the retail system for arriving at inventory figures. Often during these years the old rule of "cost or market, whichever is lower" did not apply, as the cost in some cases was higher than the prevailing market, while the market (i.e., the price at which fresh merchandise could be purchased) was almost as high as the retail selling price. Whereas manufacturing and mercantile establishments not operating on the retail system were faced with a difficult problem in the valuing of inventories, the department stores using the system solved the problem almost automatically. To illustrate the advantages of the method, assume that an article costs 60 cents, and the original price at which it is marked to be sold is $1. Three months later, at the close of the fiscal year, the selling price of this article has been marked down to, say, 65 cents, while the prevailing wholesale price is 55 cents. Under the retail method the percentage to be taken off for inventory valuation in this case is 40%, as determined from the original cost and selling price. The article would now be listed for inventory purposes at a selling price of 65 cents, and a deduction of 40% would make the present inventory price 39 cents. This would enable the establishment to make a profit in the coming period and to charge off the estimated loss of 21 cents to the period just ended.

To illustrate the process used by the majority of the well-

managed department stores to obtain the mark-on, take the following figures for one department:

DEPARTMENT A

	Cost	Selling
Inventory June 30, 1921	$100,000.00	$200,000.00
Purchases:		
July	50,000.00	100,000.00
August	50,000.00	90,000.00
September	50,000.00	95,000.00
October	50,000.00	90,000.00
November	50,000.00	90,000.00
December	50,000.00	85,000.00
	$400,000.00	$750,000.00
Mark-ups during period		50,000.00
		$800,000.00

In this case the mark-on would be 50%, or the figure required to reduce $800,000 to $400,000. The mark-downs for the same period might have been $100,000, but this item is not considered in arriving at the percentage to be deducted from the selling price to reduce it to an inventory "cost."

It may be suggested that in arriving at the mark-on the amount of mark-downs should be deducted from the marked selling figure. If this were done, however, it would give in the majority of cases an inventory figure higher than cost. For instance, in taking the figures in the preceding illustration, we have:

Selling	$800,000.00	
Less: Mark-downs	100,000.00	$700,000.00
Amount added to the $400,000 cost		$300,000.00
Mark-on		42 6/7%

Assuming sales of $350,000, which include 75% of the merchandise marked down as well as an equal percentage of that marked up, we have:

Merchandise available for sale, considered at selling prices	$700,000.00
Less: Sales	350,000.00
Inventory at selling prices	$350,000.00
Less: Mark-on (42 6/7%)	150,000.00
Or an inventory valuation of	$200,000.00

However, if the original cost of the merchandise on hand is calculated we find that the cost is lower than the above figure.

Inventory, as taken at selling prices	$350,000.00
Add: To eliminate 25% of the $100,000 mark-downs still in stock	25,000.00
Total	$375,000.00
Deduct: To eliminate 25% of the $50,000 mark-ups still in stock	12,500.00
Stock on hand at original marked prices	$362,500.00

Original mark-on ($750,000 – $400,000 = $350,000), or 46 2/3%

The cost price of merchandise on hand would be, therefore, $193,333.33, i.e., $362,500 – $169,166.67 (362,500 × 46 2/3%).

As it is assumed in the above figures that the sales of $350,000 included 75% of the merchandise marked down and that the total of the mark-downs was $100,000, it follows that such sales must have included merchandise reduced to the extent of $75,000. The merchandise still on hand, therefore, must include articles the prices of which in the aggregate have been reduced $25,000, being the balance of the total mark-downs of $100,000. Similar reasoning proves that the sales included $37,500 of the mark-ups, while merchandise on hand carried in the aggregate mark-ups of $12,500.

It may be suggested that no consideration should be given to either the mark-up or the mark-down in arriving at the mark-on, but this practice may also lead to an inventory figure higher than cost. Using the same figure and assuming that the sales of $350,000 include 75% of the merchandise marked down and 25% of the merchandise marked up, we have:

Inventory at selling price	$350,000.00
Less: Mark-on (46 2/3%)	163,333.33
Inventory valuation	$186,666.67

The original cost price of the merchandise on hand, however, would be $180,000, which is lower than the inventory. This original cost price is figured as follows:

Inventory, as taken at selling price	$350,000.00
Add: To eliminate mark-downs still in stock, 25% of $100,000	25,000.00
	$375,000.00
Deduct: To eliminate mark-ups still in stock, 75% of $50,000	37,500.00
Stock on hand, at original marked price	$337,500.00
Less: Original mark-on (46 2/3%)	$157,500.00
Or an inventory valuation of	$180,000.00

The Problem of Varying Mark-Ons in the Same Department

In connection with the retail system there are many interesting problems, which require study and close analysis in order that the accountant may avoid making errors of principle. For instance, the merchandise of one department may consist of two or more large classes with varying percentages of mark-on. Unless the sales for the various classes are in proportion to the purchases, the inventory valuations may be either too high or too low. To illustrate:

	Class A		Class B	
	At Cost	At Selling	At Cost	At Selling
Purchases	$10,000.00	$15,000.00	$10,000.00	$20,000.00
Sales	8,000.00	12,000.00	1,000.00	2,000.00
	$ 2,000.00	$ 3,000.00	$ 9,000.00	$18,000.00
Mark-on	33 1/3%		50%	

The combined figures calculated by the method of the retail system would give:

Purchases, at cost	$20,000.00
Purchases, at selling	$35,000.00
Mark-on	42 6/7%
Inventory class A, at selling	$ 3,000.00
Inventory class B, at selling	18,000.00
	$21,000.00
Mark-on (42 6/7%)	9,000.00
Inventory valuation	$12,000.00

Whereas the actual inventory is $11,000 ($2,000 class A and $9,000 class B).

Where such a condition exists and the amounts involved are large, the solution of the problem is to divide the department into two units, keeping separate stock figures for each unit.

Reconciling Book and Physical Inventories

It would seem at first glance that the physical inventory, which is taken at regular intervals and listed at selling prices, could be easily reconciled with the amounts appearing in the book inventory records, which are also at selling prices. Such, however, is not the case. Many departments show large differences, either over or short. For instance, shortages are sometimes accounted for by losses through shrinkage in yard goods or by differences due to special prices being made at the time of the sale on dozen or gross lots when the merchandise has been marked to sell as an article. In many instances, however, the differences are not caused by shrinkages or differences in price or other known causes, but are due to violation of the rules by the buyers. The prices may be manipulated by omitting to report mark-ups or mark-downs or by deliberate alteration of the marked prices without notice to the office. Investigation of large inventory

differences in certain departments generally reveals the fact that such differences are due to changes in the marked selling prices without reporting such changes to the office. When the buyer responsible for the change is a trusted employee and is operating his department at a profit all that can be done is to ask him to follow instructions in the future.

The Stock Book

The stock book in which is recorded the purchases, sales, mark-downs, etc., generally has columns for the following information:

Debits

A. Inventory at Beginning of Period at Selling Prices
B. Purchases at Cost Prices
C. Purchases at Selling Prices
D. Mark-Ups
E. Transfers from Other Departments at Selling Prices
F. Returned Sales

Credits

G. Returned Purchases at Cost
H. Returned Purchases at Selling
I. Sales
J. Mark-Downs
K. Transfers to Other Departments at Selling Prices
L. Merchandise Charged to Operating Expenses
M. Inventory at End of Period at Selling Prices

The sum of all the debits, exclusive of the purchases at cost, less the sum of all the credits, exclusive of returned purchases at cost and of inventory at the end of the period at selling prices, gives the book inventory at its selling price or

$$(A + C + D + E + F) - (H + I + J + K + L) = M$$

"Periodizing" Inventories

Some stores have adopted a plan by which the physical inventories are what is termed "periodized," to ascertain the length of time the merchandise has been in stock. This is accomplished by placing on the price tag at the time of marking the selling price a mark which is referred to as a "season letter." The season letters indicate the period during which the merchandise was purchased. When the inventory is taken, the letters on the tags are entered on the inventory sheets and the amounts are extended in separate columns provided for each active season letter. For instance, the amount of the merchandise on hand in one department may be summarized as follows:

Season Letter		
D	Purchases during first half 1919	$ 137.00
E	" " second half 1919	734.00
F	" " first half 1920	1,693.00
G	" " second half 1920	3,149.00
H	" " first half 1921	18,739.00
I	" " second half 1921	43,182.00
		$67,634.00

The periodizing of the merchandise on hand enables the merchandise manager to determine the nature and the amount of the old merchandise carried in each department and to make arrangements for the disposal of obsolete items.

Turnover

The turnover represents the number of times the average stock is sold during a given period and the rate of turnover is a guide to the management as to whether the merchandise of a department is moving as fast as in similar periods in previous years. The turnover is calculated by dividing the average inventory carried during a given period taken at selling prices, into the sales for that period. Assuming sales of $150,000 for the 6

months ending June 30, 19–, and the following inventories at selling prices:

January 1	$ 70,000.00
January 31	65,000.00
February 28	45,000.00
March 31	50,000.00
April 30	55,000.00
May 31	65,000.00
June 30	70,000.00
7)	$420,000.00
Average inventory at selling	$ 60,000.00

This would give a turnover of 2 1/2 ($150,000 ÷ $60,000).

If the figures used for the inventories are at cost prices, the figures for the sales would be taken at the cost of sales price.

Where there are no monthly inventory figures available, an average of the inventories at the beginning and the end of the period may be used. This average, however, will not always be representative of the stock carried by the department for the entire period, as it is likely that the stock on hand at intervals during the period may be considerably larger or smaller than that carried at the beginning or end of the period. Some establishments go to the extreme of using an average of the inventories at the close of each week. If monthly book inventory figures are available it should not be necessary to prepare weekly figures, as the monthly figures are sufficiently representative of the average stock to give fairly accurate turnover figures.

Alteration Departments

Some stores form separate departments of rooms in which suits, millinery, upholstery, etc., are altered, and make charges for alterations. In some cases articles which cannot be obtained easily are manufactured by these alteration departments, for which work a special price is asked. The alteration charges and the charges made for the articles specially manufactured make up the sales of the alteration department.

Complete records are kept of the operating costs of these departments, generally on a job basis. The costs and the sales figures are as a rule recorded in the stock book used to prepare the book inventory figures for the regular selling departments, the pay-roll figures being entered in special columns. The inventory figures for these alteration departments are not prepared in the same manner as those for the regular selling departments. The inventories, except for the value of a few partially completed jobs, consist of materials and supplies to be used for alterations. These materials and supplies are valued at their cost prices. These inventories are comparatively small in amount.

The principal reason for the separation of the "alteration" figures, as they are called, from the regular suit, millinery, etc., or "straight selling department" figures is that their inclusion makes it impossible to prepare dependable mark-on figures. The percentage of mark-on or gross profit for the alteration work varies to such an extent that the combination of the alteration figures with the straight selling figures gives a result which at inventory time does not represent the true mark-on of an inventory of more than, say, 95% of straight selling merchandise and probably less than 5% of alteration merchandise or supplies.

Distribution of Expenses

Expenses are generally entered in a columnar record in order to facilitate their distribution to various accounts. The payrolls are distributed to the selling or to the expense departments so as to provide subtotals for these divisions. Almost every department store prepares monthly profit and loss statements with the expenses distributed to the departments so as to give a net profit or loss figure for each. In this statement the expenses are grouped according to functions, as illustrated on pages 418–422.

There is much difference of opinion as to the extent to which department store expenses should be distributed over departments. Some establishments distribute all expenses in this way,

while others limit the distribution to the allocation of the expenses directly chargeable to departments, as, for instance:

1. Salaries and expenses of buyers.
2. Salaries of salespersons.
3. Salaries of other departmental employees.
4. Miscellaneous supplies and expenses incurred exclusively for any department.

When it is considered that many departments undoubtedly are benefited through their location or because the prices which they charge for the articles are due in a certain measure to heavy expenses incurred for certain store operations, such as delivery in the case of furniture or household goods, it can be seen that it is hardly fair to distribute all expenses other than direct departmental expenses on a sales basis. On the other hand, too much significance should not be placed on the figures obtained when the various expenses are distributed to the departments on a more or less arbitrary basis. It is better to consider that these final results have value solely for the purpose of comparison with similar results of the same department for other periods. There is, for instance, little or no basis for comparing the results of a department on the first floor selling for cash many small articles requiring comparatively few deliveries, with the results of a department, say on the sixth floor, making many charge sales, all of which must be delivered.

The question of rent distribution is a problem in itself. In a store with six selling floors, the distribution of rent might be as follows:

First Floor................	40%
Second "	20
Third "	10
Fourth "	10
Fifth "	10
Sixth "	10

Even when all of the department heads agree that this division is equitable and that the rent on each floor should be dis-

tributed on the basis of the floor space, the question of the comparative advantages of certain locations on a given floor remains to be settled. For instance, the departments to which the main entrance leads and departments in front of the elevators are advantageously located. Certain adjustments must be made so that these favored departments will be charged a higher rental than other departments. In some establishments charges for tables located in the main aisles and used for special sales, are allocated to various departments. This practice necessitates the use of special records to adjust the rent figures. The average store, however, does not consider it worth while to make a special distribution for this purpose.

The other expenses are distributed in some cases as follows:

> Maintenance and operation of the plant, on the basis of the floor space occupied by each department.
>
> Receiving expense, on the basis of the cost prices of the merchandise purchased for each department.
>
> Delivery expense, on the basis of packages delivered.
>
> Advertising, on the basis of advertising space used by each department. Headings and general advertising on the basis of sales.
>
> Buying other than direct departmental, on the basis of purchases made by each department.
>
> Selling expense other than direct departmental, on the basis of the sales of each department.
>
> Administrative and general, on the basis of the sales of each department.

Cash Discounts

Some store managements allocate to each department the cash discounts which would be earned if all the discounts allowed on the purchases of that department were taken. The purchases of some departments are practically net, those of other departments are subject to large cash discounts. This allocation makes

possible a comparison of the results of the departments based on the net cash prices which should be paid for the merchandise purchased.

Another method of handling the departmental cash discount is to assume that each department should earn an arbitrary discount on all purchases, generally 6%. As each invoice is entered, the department is charged with the difference between the discount at the 6% rate and that at the rate of discount appearing on the invoice. For instance, an invoice for $1,000, terms 2% 10 days, net 60 days, would have 4% (6% – 2%) or $40 added, making a charge to the department for the purchase of $1,040.

Where this method is used, such discounts should be eliminated from the departmental purchase figures when the percentages of mark-ons are prepared for inventory valuations.

The earnings through cash discounts are as a rule the result of a sufficiency of invested or borrowed capital, generally the latter. It is therefore considered equitable by certain store executives to make a charge to the departments for interest on the amounts invested in the department. This is generally done by charging each department, say, 6% per annum on the average stock carried by the department. The cost of the fixtures and equipment used exclusively by a department is sometimes added to the amount of the average stock when making this interest charge.

Balance Sheet

The balance sheet of a department store does not differ from that of any mercantile establishment. After the assets are evaluated, and the liabilities determined, there are no special problems in assembling the figures. The only item in the balance sheet given below which might require explanation is the Cash Value of Firm Life Insurance.

It is the policy of many large enterprises to secure life insurance for substantial amounts covering the lives of some of the executives whose services are especially valuable in the operation

of the business. This is done with the thought that the sudden death of one of these executives might to a certain extent disrupt the organization and cause a loss. The cash surrender value of such insurance policies is carried as an asset. At the end of each year these values are adjusted. The increase in the cash surrender value is added to the asset account. The difference between the premium paid and the increase in the cash surrender value is considered a general expense item.

THE JONES AND BROWN COMPANY, INC.

BALANCE SHEET

December 31, 19-

Assets

Cash on Hand and in Banks	$ 185,320.75	
United States Victory Notes, $5,000 par	4,630.80	
Notes Receivable, Customers	15,190.00	
Accounts Receivable, Net of Reserve	318,194.80	
Merchandise, at cost or less	1,382,468.40	
Total Current Assets		$1,905,804.75
Supplies	$ 25,192.30	
Prepaid Insurance, Interest, etc.	17,341.40	
Total Deferred Charges		42,533.70
Securities of Other Companies	$ 40,190.30	
Notes Receivable, Other than customer's	28,340.70	
Cash Value of Firm Life Insurance	16,189.20	
Total Other Assets		84,720.20
Land	$380,194.00	
Buildings, Net of Depreciation	789,347.30	
Store Fixtures, Net of Depreciation	291,410.80	
Delivery Equipment, Net of Depreciation	57,300.10	
Total Plant and Equipment		1,518,252.20
Total Assets		$3,551,310.85

Liabilities

Notes Payable		$ 325,000.00	
Accounts Payable		418,706.50	
Accrued Salaries, Expenses, etc.		54,625.30	
Income and Excess Profits Taxes		95,310.00	
Total Current Liabilities			$ 893,641.80

Capital

Capital Stock, 150,000 Shares		$1,500,000.00	
Surplus, June 30, 19—	$967,258.25		
Profits for six months to December 31, 19—	190,410.80	1,157,669.05	2,657,669.05
Total Liabilities and Capital			$3,551,310.85

Earnings and Expenses

The statement of earnings and expenses of a department store should give information which will enable the management to determine not only the results of the business, but whether the store as a whole is being operated efficiently and economically. In some store statements a few expense accounts show such large amounts and combine so many expenses that their study reveals nothing of assistance to the management without a detailed analysis. On the other hand, other store classifications include hundreds of accounts making the statement of earnings and expenses so long and formidable in appearance, that the executive feels he can hardly spare the time necessary for its perusal. In preparing a statement of earnings and expenses the data should be so arranged that the executive can easily interpret the figures and through their use make plans to effect economies and to increase the efficiency of the organization.

Though much has been done during the last four or five years by research associations and by associations of department store accountants to standardize department store accounts and their classifications, these associations and the individual accountants

have not always kept in mind the man who reads or should read the statement. Where it is evident that the executive is not interested in or cannot understand the long statement provided, it is the accountant's duty to furnish him with a more condensed form as a guide to lead him gradually to use the full statement.

A typical statement of earnings and expenses in slightly condensed form is given below:

THE JONES-BROWN COMPANY, INC.

STATEMENT OF EARNINGS AND EXPENSE

For the Year 19–

Sales	$.....	
Less: Returns and Allowances	.....	
Net Sales		$.....
Cost of Sales:		
Inventory at beginning of period	$.....	
Purchases—net of returns and allowances	.....	
Freight, Express, and Cartage Inward	.....	
Duties on Foreign Purchases	.....	
Alteration Cost (suits, cloaks, etc.)	.....	
Total	$.....	
Less: Inventory at end of period	.....	
Cost of Sales		......
Gross Merchandise Profit		$.....
Buying Expense:		
Salaries and Wages:		
Merchandise Manager and Assistants	$.....	
Buyers and Assistants	.....	
Receiving and Working Room	.....	$.....
Rentals New York Office		.....
Supplies:		
Stationery and Printing	$.....	
Other Supplies	.....	.....
Traveling Expenses		.....
Postage, Telephone, and Telegraph		.....
Miscellaneous Expenses		.....
Total Buying Expense		$.....

Selling Expense:		
Salaries and Wages:		
Sales Manager and Assistants	$......	
Floor Managers and Assistants	......	
Sales Force	......	
Commissions	......	
Premiums	......	
Stockpeople	......	
Cashiers and Examiners	......	
Mail Order Department	......	
Adjustment Bureau	......	$......
Supplies:		
Sales Books	$......	
Boxes	......	
Wrapping Paper and Twine	......	
Tags and Tickets	......	
Miscellaneous	......	......
Miscellaneous Expenses		......
Total Selling Expense		$......
Publicity:		
Salaries and Wages:		
Advertising Manager and Assistant	$......	
Decorators and Window Dressers	......	
Others	......	$......
Advertising:		
Newspapers	$......	
Catalogues	......	
Circulars	......	
Other Advertising	......	......
Supplies:		
Stationery	$......	
Decorations	......	
Other	......	......
Traveling Expenses		......
Postage, Telephone, and Telegraph		......
Miscellaneous Expenses		......
Total Publicity		$......

Delivery Expense:		
Salaries and Wages:		
Package Collectors	$......	
Shipping Department	......	
Delivery Department	......	$......
Express and Freight	$......	
Postage on Parcels	......	......
Supplies:		
Packing Supplies	$......	
Gasoline, Oil, and Grease	......	
Other	......	......
Depreciation on Delivery Equipment		......
Insurance on Delivery Equipment, including Liability		......
Repairs to Equipment		......
Uniforms		......
Bonds, Surety and Fidelity		......
Miscellaneous Expenses		......
Total Delivery Expense		$......
Rent:		
Rental of Leased Store Buildings		$......
Interest on Mortgage on Owned Buildings		......
Insurance on Owned Buildings		......
Repairs of Owned Buildings		......
Depreciation on Owned Buildings		......
Total Rent		$......
Maintenance and Operation of Plant:		
Salaries and Wages:		
Superintendent and Staff	$......	
Watchmen	......	
Elevator Operators	......	
Electricians	......	
Porters, Cleaners, etc.	......	
Other	......	$......

Supplies:		
Operating	$......	
Cleaning	......	
Other	......	......
Insurance on Fixtures		......
Repairs and Replacements—Fixtures		......
Depreciation on Fixtures		......
Heat, Light, and Power:		
Salaries and Wages	$......	
Coal	......	
Water	......	
Supplies	......	
Repairs	......	
Depreciation on Plant	......	
Miscellaneous Expenses	......	......
Miscellaneous Expenses		......
Total Maintenance and Operation of Plant		$......
General and Administrative Expenses:		
Salaries and Wages:		
Executives and Assistants	$......	
Office	......	
Telephone Operators	......	
Employment Department	......	
Educational and Welfare	......	
Information Bureau	......	
Other General	......	$......
Supplies:		
Office	$......	
Miscellaneous	......	......
Traveling Expenses		......
Postage		......
Telephone and Telegraph		......
Insurance on:		
Merchandise	$......	
Public Liability	......	
Surety Bonds	......	
Other (not including that on buildings or fixtures)	......	......

Legal Fees		......
Accountants' Fees		......
Contributions		......
Gifts		......
Reserved for Doubtful Accounts		......
Taxes on Merchandise		......
Corporation Tax		......
Other Taxes (not including that on land or buildings)		......
Miscellaneous Expenses		......
Total General and Administrative Expenses		$......
Total Expenses		$......
Net Profit on Sales		$......
Other Income:		
Interest on Notes Receivable	$......	
Cash Discounts on Purchases	......	
Miscellaneous Store Revenue	......	......
Total Income		$......
Deductions from Income:		
Interest on Notes Payable	$......	
Provision for Federal Income Tax	......	......
Profit for the Period		$......

Although this statement of earnings and expenses is quite lengthy, anyone familiar with the subject would doubtless suggest many other accounts. It has been the aim to include only those accounts which are necessary to indicate the principal expenses. A study of these accounts will show the futility of combining any of them if they are to furnish the information needed.

CHAPTER XII

THE ORGANIZATION AND ACCOUNTS OF A PUBLIC ACCOUNTANT'S OFFICE

By Albin Russman

Need for Records and System

The engineer, lawyer, or other professional man engaged in solitary practice may need little more in the way of accounts and account-keeping than such records as may be kept by his secretary. It is apparent, however, that the need for accounting records and systems grows with the number of persons on the staff and the number of members of the firm. Indeed, for a firm of lawyers, engineers, or accountants to attempt to carry on their work without an adequate system of accounts and the organization of their activities into departments under responsible heads would be as futile and disastrous as for any other type of undertaking.

The records and plan of organization of the professional man's office are often makeshifts planned to fit the needs of the moment with the minimum of clerical labor rather than to furnish the members of the firm the information required for the most economical management. Whatever the system of books and records adopted, they should be kept on the double-entry principle and should embody such features of cost accounting as may be required for the control of the personnel and the analysis of the charges to clients. It is the purpose of this chapter to present the fundamental considerations involved in such a system and to describe the organization and routine of a public accountant's office.

Before proceeding to discuss such system and organization, a brief description concerning the work of the public accountant may be of help in understanding these matters.

Branches of Accounting

The work performed by the public accountant consists of five main kinds all of which are usually carried on by large concerns and in some of which smaller firms may specialize.

Auditing. This work consists of the scrutiny of the accounting records to ascertain their correctness prior to the preparation of balance sheets and other financial statements.

General Accounting. Under this heading falls such work as acting in an advisory capacity for a business, in so far as the accounts and the financial condition thereof are concerned. In the event of corporate reorganization, merger, or liquidation the services of the public accountant are indispensable.

Cost Accounting and Efficiency Work. Reorganizing the accounting system of a manufacturing business, so that accurate manufacturing statistics can be obtained and cost reports prepared. The cost system is usually made a part of the general accounting system.

Investigations. Public accountants are often engaged by banking or other financial interests to examine the accounts of a company in connection with the issuance of bonds and other securities, or the purchase or sale of a business enterprise. Other investigations are such as the examination for legislative committees of municipal, state, or federal government accounts by public accountants.

Tax Reports. The preparation of government tax reports from the information shown on the financial records of a business, is a branch of public accounting that has assumed much importance under the present complex scheme of taxation.

In addition to the branches of public accounting mentioned above the accountant's services are employed in other fields of work. He may be for instance, and frequently is, called upon to act as arbitrator in disputes about financial matters. The adjudication of wage disputes often requires the services of an accountant. More and more, problems of business organization and management are claiming his attention.

The public accountant may have calls from many lines of business, and he cannot be expected to be familiar with all. Though a broad knowledge of business, finance, and economics is essential as a foundation on which the practice of all phases of professional accounting must rest—perhaps as much as the theoretical training in the science of accounting—the tendency to specialize in the branches of cost accounting, tax work, and other limited fields grows with the complexities and ramifications of business.

Qualifications and Preparation for Profession

A few observations here are not untimely as to the mental qualifications and the preparatory training required by the aspirant to the ranks of professional accountants.

In addition to determination, tact, energy, and other characteristics that are the foundation of marked success in every line of human endeavor, an accountant must possess mental ability of no mean order combined with actual experience in order to pass the very severe tests imposed upon those who seek admission to the profession. Of the many who present themselves at the state and institute examinations only a minority are successful. While an analysis of the cause of failure would in many cases disclose a dislike for that mental perspiration which is part of the preparatory training for every dignified profession, yet in other cases failure would be found to be due more to misapplication than lack of mental effort. Unless a man has some power of deducing facts from given premises, he is doomed to disappointment in his effort to enter the profession of accountancy. It is true that analytical power may be developed and that many successful accountants at the start of their careers revealed no special aptitude for their profession. Such men, however, are exceptional, and for every one who succeeds in spite of no pronounced bent for the profession a score or more fail. Failure to come up to the professional standard of competence in accountancy as evidenced by a state certificate is, however, less serious

perhaps to the student of accountancy than to the student in any other professional field, for a knowledge of the subject is valuable in every line of business, while the mental training afforded those who fail despite an earnest effort to succeed is in itself of value.

Having completed a university course in business and accountancy, the student who looks forward to a career as a certified public accountant should familiarize himself with the laws of the various states regulating the practice of public accountancy. These laws usually require him to meet some educational standard and to serve an apprenticeship in the office of a certified public accountant, before he can receive permission to take the examination as a candidate for the C. P. A. certificate. It is ordinarily not possible to prepare for the examination in less than five years, because both a theoretical and practical knowledge is required of many branches of the profession. Such knowledge can be obtained only by combining practical work in the employ of recognized professional accountants with a study of the theoretical aspects of the subject. There is a growing tendency on the part of established firms of accountants admitting members to their staffs, to give preference to men thoroughly trained at recognized schools.

Ethics of the Profession

Professional accountants have a code of ethics just as the medical and legal professions have theirs. A few of the acts which are considered as unethical are:

1. The soliciting of business through the medium of advertising, or encroaching upon the business of another practicing public accountant.
2. Offering to handle an engagement for a fee lower than that charged by another firm of accountants who have rendered satisfactory service to a client.
3. Giving commissions or allowing other participation by persons not practicing public accounting, out of profits from professional work.

4. Accepting fees contingent upon the results of professional services rendered.
5. Certified accountants should not certify to statements or accounts which have not been entirely verified under their supervision, or by some reliable person in their employ.

In addition to the code of ethics concerning the relations between accountancy firms, many reputable concerns promulgate certain rules to be observed by their staffs regarding their relations with the client. These rules of conduct are embodied in booklets entitled "Confidential Instructions" or "Office Rules and Instructions to Staff Accountants." The following rules illustrate their general tenor:

1. Inasmuch as the work of the public accountant involves the examination of private affairs, it becomes his duty to treat as strictly confidential everything which may come to his attention. Information obtained through observation may help to form certain opinions of the business. These opinions should not be mentoned to the client's employees, but should be reserved for the report.

2. Where several seniors are engaged on an audit it is advisable for them to confer before they give an opinion to a client in regard to the accounting methods used in the business under examination.

3. Accountants' check marks should not mar the appearance of the client's books and should be made according to the system which the firm uses on all its work, so that the man in charge of an engagement will know what work has been covered should any of his assistants be called away to assist on another engagement.

4. When not properly supervised, junior accountants in their quest for information sometimes assume the attitude of private detectives, thereby antagonizing the personnel in a client's office. Such conduct creates a poor impression and should be avoided.

5. The auditor should make an effort to arrange his work so as not to interfere with the regular routine of the client's office; he is expected also to observe the hours of the business in which he is at work.

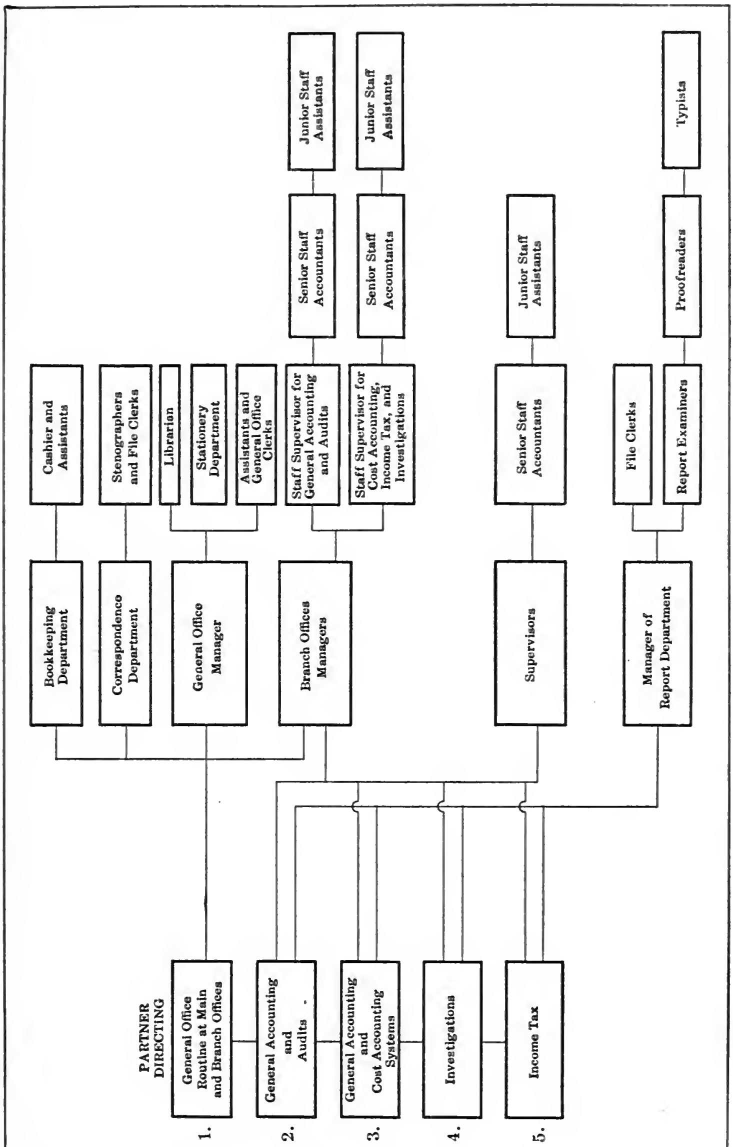
Organization of Business

The accountants who conduct their businesses as corporations are relatively few in number. The ideals of a professional business demand full personal responsibility and it is advantageous to a firm to include in its title the names of men of recognized ability in their particular field. Therefore the partnership is the customary form of organization for a business which sells professional service. The official attitude of the leading accountants of the country as expressed through the American Institute of Accountants is decidedly one of opposition to the corporate form of organization.

The office organization of a firm of accountants naturally depends upon the size of the business, the kind of work in which the firm may specialize, and the field covered by its operations. Almost all professional businesses begin locally and extend their operations over an ever widening field as the reputation of the firm grows. Thus, the more prominent accounting firms maintain branch offices in the principal cities of the country. The chart shown below (Form 1) illustrates the organization of a firm of public accountants with five active partners, each of whom directs some division of its work. Usually, the method of organization is to delegate the supervision of the different branches into which the work naturally divides itself to partners of the firm. The development of any branch of the business depends almost wholly upon the character and ability of the men in charge, and the size of a professional business depends upon keeping together the men who have been largely responsible for building it up. Hence, the custom is prevalent among accountancy firms to take such men of their staffs into partnership.

Method of Dividing Profits

As a general rule, the partners are divided into two classes—senior and junior. The senior partners are in charge of the main activities and the junior partners occupy the less responsible executive positions. For the purpose of the division of profits



Form 1. Organization Chart of a Firm of Public Accountants

another distinction is often made between partners. The method of dividing profits is a means of including the competent and trusted employee in the ranks of those junior partners who have no interest in the business other than that they are entitled to a certain share of the profits after the capital or good-will shares have been paid an agreed rate of interest. The plan of division which has received the indorsement of the American Institute of Accountants is briefly as follows: The good-will of the firm is divided into 100 shares and these shares are allotted to the senior partners usually on the basis of their capital investment. The good-will partners hold title to all the partnership assets and are liable for its debts in the same proportion. In addition to the good-will shares a number of non-good-will shares are created. Fifteen such shares are first allotted to each senior partner and then as many of those shares as the managing board—consisting of the good-will partners or chosen from them—determines, but in no case more than 15 to each junior partner or employee. In the division of profits, after interest on the investments of senior partners has been taken account of, the share of each partner—good-will and non-good-will—shall be that part of the divisible profits represented by the fraction whose numerator is the number of shares, both good-will and non-good-will, held by him and whose denominator is the total good-will and non-good-will shares held by all partners. No partner has the right to object if his fractional interest is decreased by an increase in the number of outstanding non-good-will shares.

Junior partners become senior partners by the purchase of the good-will shares set aside for that purpose or available upon the death or retirement of a member of the board of management, composed usually of the senior partners. The advantages of this method are its flexibility and the manner in which the interests of the older partners are protected while at the same time affording a means of rewarding merit by the allotment of non-good-will shares.

Matters Governed by Partnership Agreement

The partnership agreement which governs the business relations between members of the firm, usually provides for the following:

1. Admittance of new partners.
2. Responsibilities or duties assumed by each partner.
3. Division of profits of business.
4. Procedure for dissolution in the event of:
   (a) Disability or death of a partner.
   (b) Retirement of a partner.
5. Good-will of the firm and settlement with estate of deceased partner.

In addition the agreement will include the customary provisions regarding contributions of capital, the keeping of accounts, etc., and the general rules which are to govern business transactions. The conditions under which firms are organized are so different that no standard form of partnership agreement can be presented.

Office Routine

The study of Form 1 indicates the general nature of the office work and the method of supervision. One partner, for instance, directs the work of the office personnel through the managers of the various office departments, and in consultation with the other partners engages the members of the accounting staff. Other employees are engaged through the managers of the various departments. The partner who acts as office manager is generally in closest touch with the movements of the staff. His major duties are to handle important correspondence, sign checks for the firm, and supervise the billing of clients for the work on completed engagements. The other partners are responsible for the work of the members of the staff; either directing such work at the client's offices, if its importance merits personal attention, or delegating responsibility to the supervising accountants or junior

partners if any more urgent matters require their attendance at the office.

The outgoing correspondence of partners and other executives is, in a large concern, usually handled by a correspondence department. Incoming verifications, such as those received from banks in confirmation of the state of a client's bank balance, are received and distributed by this department to the accountant in charge of the engagement. The activities of this department include also the filing of general records and correspondence and the maintenance of employment records.

The partner in charge of the general office may be relieved of much detail work by one or more assistants. One of the latter executives as a rule purchases the stationery and supplies for the use of the main and branch offices, and arranges for the firm's printing—a not inconsiderable item of expense.

Proficiency Reports

The junior members of the staff of a large concern seldom come in close contact with the partners, as naturally only the supervisor and the senior in charge of an engagement discuss the progress and problems of a business with the partner who signs the report. To keep the partners informed of how the juniors are progressing, a confidential proficiency report is submitted to the office manager by the senior in charge of an engagement after its completion.

A request for an increase of compensation by a member of the junior staff is not usually granted unless the proficiency reports on file indicate that the junior handles his work skilfully and quickly, that he conducts himself properly in the client's office, that he is studying accountancy after business hours, and that in the opinion of the senior he is qualified to undertake work of greater responsibility.

Welfare and Educational Work

The larger accounting firms, appreciating the benefits to themselves and to the staff that result from the provision of

educational facilities, insurance, and other forms of welfare work, offer facilities for self-help to their employees who are willing to help themselves. Such facilities include lectures on accountancy, auditing, and tax procedure for the younger members of the staff who thereby improve their ability as accountants and prepare themselves for the Institute and C. P. A. examinations. To stimulate interest, oftentimes an examination is conducted at the end of the course and a financial or other reward is made for the best examination paper. Another financial reward that has much merit is the payment of a cash bonus at the end of the calendar year if it has been a prosperous one. The most satisfactory basis for paying such a bonus appears to be the number of years that the staff accountant has been with the firm. Providing for life insurance under a group plan at the expense of the firm is another method of financial reward.

Office Library

A good library in the office of a firm of professional accountants is a very valuable asset, especially if copies of the audits, investigations, etc., handled by the firm are transferred from the files of the report department to the library files after they have served their current purpose. The larger accounting firms have in their library files copies of all forms and books that have been devised for clients. These records are so cross-indexed that their location is possible either by reference to the alphabetical list of systems installed for clients, or to a card record classifying the systems by business or industry. If, for instance, a member of the staff is to devise a cost system for a client manufacturing jewelry, he may be able to find such a system in the files of the library from which he can get valuable suggestions. In addition to the file of accounting systems, files of general accounting forms are maintained, indexed as to kind of form or record for which used, such as vouchers, cash books, etc.

Use is often found for copies of mortgage agreements, reports on particular industries and general business problems made by

Congressional and other investigating committees. Catalogues of the various kinds of labor-saving devices, and the like, may be kept with profit. Some of these papers often prove to be almost invaluable to the accountant when solving problems connected with the reorganization of a business in financial difficulty. Copies of the various tax laws should also be on file.

The libraries of most accounting firms contain files of the various magazines devoted to the practice of accountancy, and it is a source of pride to the older firms to be able to show old copies of the professional magazines, indicating perhaps the length of time that the firm has been in business. The most authoritative books on accounting and the specialized branches thereof are kept on hand for reference particularly by the junior members of the staff, who are being constantly urged to improve their knowledge of the profession.

Since the work of the public accountant brings him into contact with all kinds of business enterprises, it is very important that information be available on topics of finance, industry, and business law. For a small library, the following classification will be sufficient for filing the technical and general reading matter:

1. Bookkeeping and Accounting
2. Cost, Factory Accounts, and Organization
3. Auditing
4. Miscellaneous
5. Banking, Economics
6. Law
7. Actuarial Science and Mathematics
8. Municipal and Government Reports
9. Periodicals
10. Tax Laws and Decisions Thereon

Overtime Work

During the busy season, it may often happen that members of the staff are compelled by force of circumstances to work after

regular hours. In conducting some audits, e.g., those of banks, brokerage houses, etc., the accounting staff must always do its work after the close of the regular business day and may have to work till late at night. The practice of compensating for overtime varies in different offices. In some no extra pay is given, the extra expenses—supper money, etc.—being paid, of course, by the office. In some, overtime work is allowed to accrue to be added to the length of the regular vacation period. In others, a quarterly settlement of overtime is made at the regular rate of pay, after deducting from the amount of overtime, the unassigned time and time taken off by the staff member for the same quarter. The staff member always receives his regular salary even though this overtime settlement brings a negative result.

Routine in Handling an Engagement

Before any work is undertaken for a new client, one of the partners usually interviews him concerning the kind of the work to be done. The partner must definitely ascertain what the client desires and who is responsible for the audit so that no dispute will arise as to the work or payment for it.

As soon as an engagement is undertaken, accountants of the staff are assigned to the task. By referring to the engagements list (Form 2) the office manager determines approximately what members of the staff will be free to take up the work. Work is usually scheduled about two weeks in advance. The engagements list is kept and maintained in the office manager's office and a copy is sent to the report department so that its manager may arrange for the typing of the report at the proper time.

The office manager maintains a location sheet also, a copy of which is shown in Form 3. Thereon are listed in alphabetical order the names of the accountants on the staff and where they are engaged. This sheet is written up at the beginning of the week, and such changes in location as occur during the week are reported to the partners and the managers of the various office

departments on a daily report of changes in location. By this means the office manager is able at any time to report where a particular member of the staff is located.

One or more senior staff accountants with a sufficient number of juniors are assigned to each engagement. Upon assignment to an audit, the staff accountant in charge of the work obtains from

RECORD OF ENGAGEMENTS IN PROGRESS

on *July 10* 19__

Engagement	Location	Date Commenced	Expected Completion	Accountants	Can be Released on or About
Hardware Specialties Company	*Newark, N. J.*	*July 3*	*July 31*	*J. Doe Supr.*	*July 31*
				F. Smith Sr.	"
				G. Clark Sr.	"
				R. Jones Jr.	*July 17*
				H. Willis Jr.	*July 24*
Knoxfraud Manufacturing Co.	*Albany, N. Y.*	*June 21*	*July 15*	*J. McGrady Sr.*	*July 15*
				E. Greene Jr.	*July 14*
Wilson Estate	*190 Broadway New York*	*June 29*	*July 24*	*A. Hilton Sr.*	*July 24*
				M. Kelly Sr.	*July 22*
				R. Hall Jr.	*July 22*

Form 2. Engagements List

the files the working papers covering a previous audit (if one had been made), the audit program, and permanent file. These papers, which will be described later, enable him to estimate the amount of work to be done and to plan accordingly.

At the beginning of an engagement a partner or supervisor introduces the senior in charge of the engagement to the client. If the partner or supervisor cannot be present, a letter of introduction is given the senior.

In the case of a recurring audit, however the staff accountant

in charge of the work at the previous audit is assigned. If this is impracticable the supervising accountant accompanies another staff accountant and his assistants to the client's office, and brings to their attention peculiarities of the business with which they should be familiar, offering suggestions as to the way in which the audit can be most expeditiously conducted.

ACCOUNTANTS LOCATION SHEET

on *July 10* 19__

X	Accountant	Engagement	Location	Date Available
	Adams, B.S.			
	Baldwin J.S.			
	Clark G.	*Hardware Specialties Co.*	*Newark, N.J.*	*July 31*
	Doe J.	" " "	" "	"
	Edmonds W. (Partner)	*Various clients*	*Montreal, Can.*	*Returns Aug. 1*
	Farrow M.	*Vacation*	*Atlantic City*	" *Aug. 2*
	Hilton A.	*Wilson Estate*	*N.Y. City*	*July 24*
	Jones R.	*Hardware Specialties Co.*	*Newark, N.J.*	*July 17*
	Kelly M.	*Wilson Estate*	*N.Y. City*	*July 22*
	Greene E.	*Knozfraud Manufacturing Co.*	*Albany, N.Y.*	*July 14*
	Hall R.	*Wilson Estate*	*N.Y. City*	*July 22*
	McGrady J.	*Knozfraud Manufacturing Co.*	*Albany, N.Y.*	*July 15*
	Willis H.	*Hardware Specialties Co.*	*Newark, N.J.*	*July 24*

X. Note: If reserved for an engagement to be started when work at hand is completed check X column.

Form 3. Location Sheet

In addition to this work the supervising accountants visit the members of the staff on outside engagements. The work is divided between supervisors according to their specialty. One supervisor is usually in charge of the cost accounting work, another keeps in touch with current bank examinations, while still another may specialize in the income tax returns.

It is also the duty of the supervisors to examine working papers, schedules, and statements before submitting them to the interested partner, who in turn gives them a further careful scrutiny.

Permanent File

Upon the first visit to a client's office a set of papers, known as the "permanent file," is prepared. Just what this file should contain is a matter of individual preference, but the following items are some of those considered indispensable:

Abstracts from:
- Articles of Incorporation
- By-Laws
- Minutes of Directors' Meetings

Particulars of:
- Franchises
- Good-Will
- Trade-Marks and Copyrights
- Valuation of Properties
- Organization and Personnel

Audit Program

Unusual features of the business with which the auditor should be familiar

This file is of great value to the staff accountant who is to make periodic audits. From the memoranda contained he can familiarize himself with the organization of the business and the system of accounts.

The staff accountant is required to keep this file up to date by supplying such additional information as will be of value at subsequent audits. The confidential nature of a good deal of this information points out to the business man the wisdom of assuring himself of the high professional standards of a firm of accountants before entering into negotiations with them. The methods of securing the information required for a permanent file are usually described in treatises on auditing procedure and will not be reviewed here.

The audit program serves much the same function for the staff accountant as the plans of the architect serve for the builder of a house. This program as illustrated in Form 4 is a list or

schedule of the work to be done during the course of the audit. Provision is made on the program to keep track of the work of the various members of the staff assigned to the audit. Reference to the form will indicate the content and method of use of a typical audit program for a trading business.

One of the uses of the program is to record in the columns shown thereon the time spent by assistants on the work assigned to them. As each operation is completed the time is noted on the program. The total time as per the audit program must equal the total time reports made up weekly by all those on the engagement. A method of control over time reports is thus provided. Where the audit is made in interim periods, columns are provided to show the hours spent on the work by the various members of the staff at each period.

Accountant's Working Papers

The accountant's working papers are the connecting link between the client's records and his report; they should be clear and definite so that whenever reference to them is necessary the information sought will be readily obtained. Each sheet of the working papers should be indexed by subject and headed with the name of the business under audit, the accounts it covers, and the date.

An effort has been made by some accounting firms to standardize the form and make-up of the working papers. This standardization in no way limits the accountant's initiative in presenting facts and information in addition to the minimum required in the working papers. The chief advantage of standardized working papers is that they provide a uniform method of indexing and of presenting the details of a client's accounts to the interested partner in such a manner that the work of examination is expedited. While it is not expected that the standard form can be used in all cases, the staff accountants are required to maintain the general principles outlined. The conditions affecting the business of many clients vary so extensively that the judgment

Hardware Specialties Company, Inc. Audit of Accounts December 31, 19—				
Description of Work	Accountants' Time (Hours)			
	H. R.	S. T.	J. F.	J. M.
General Ledger				
Prepare Trial Balance				
Footings of Accounts				
Check Balances—start of period audited				
Check Postings—subsidiary records				
Analysis of Accounts				
General Journal				
Check Footings				
Check Postings				
Examine Entries				
Vouch entries where necessary				
Cash Journal				
Check Footings				
Examine Entries				
Check Postings				
Compare Debits with Bank Statements				
Compare canceled bank checks with credit entries				
Vouch items charged to General Expense Accounts				
Check contra entries				
Reconcile cash balances with cash in hand and in bank				
Mail verification certificates to banks in which funds are deposited				
Voucher Register				
Check Footings and Extensions				
Examine Vouchers and compare with Register				
Examine distribution of items				
Test dates of items marked "Paid"				
Take list of unpaid items				
Check Postings				
Sales Book				
Examine entries to determine if all are genuine sales of period				
Compare entries with duplicate sales tickets				
Test Postings to Customers Ledger				
Check Postings to General Ledger sales accounts				
Check Footings and distribution				
Check Returns if entered in section of this book				
Customers Ledger				
Test Postings				
Test Account Footings				

Form 4.

Hardware Specialties Co., Inc. Audit of Accounts (*Continued*) December 31, 19—				
Description of Work	Accountants' Time (Hours)			
	H. R.	S. T.	J. F.	J. M.
Customers Ledger (Continued)				
Prepare Trial Balance				
Check with controlling account in General Ledger				
Purchase Book				
Scrutinize entries				
Compare entries with purchase invoices				
Test Postings to Creditors Ledger				
Check all Postings to General Ledger				
Examine shipping department records for returns				
Foot columns and check distribution				
Creditors Ledger				
Test Footings				
Prepare Trial Balance				
Compare with General Ledger Controlling Account				
Minute Book				
Make abstracts of Minutes				
Examine Charter and By-Laws				
Obtain data on organization of firm and personnel for permanent file				
Certificates				
Prepare certificates to verify:				
Bank Balances				
Certificates regarding Liabilities				
Certificates on Inventories				
Miscellaneous				
Conferences with Clients				
Conferences with Partners and Supervisors				
Examination of Stock Records				
Preparation of Report and Statements				
List of books or records to be examined				
Traveling time, etc.				
Total Time of Accountants				

Audit Program

of the accountant in charge must determine what schedules are necessary to support the items on a balance sheet or a profit and loss statement.

For his working papers, the staff accountant obtains from the client, during the course of the audit, the following three certificates:

1. A certificate regarding inventories, upon which the client certifies that:

(a) The inventories submitted were prepared by the regular clerks of the business under the supervision of an officer thereof.

(b) The quantities are correct as to count, measurement, or other description.

(c) The inventory is stated at cost, less trade discounts, etc., or that it is stated at market value if that is lower than cost.

(d) Provision has been made for obsolete goods and for depreciation.

(e) All the items in the inventory have been paid for or that the liability therefor has been set up on the books.

(f) All goods sold have been eliminated from the inventory.

2. A certificate regarding liabilities worded as follows:

> The undersigned hereby certifies that on..........
> there were outstanding the following liabilities which were not shown in the accounts, all others having been recorded:
>
> ....
>
> ....
>
> The following assets of the company were pledged at............as security for liabilities:
>
> ....
>
> ....
>
> ....
>
> By....................
>
> Date..............

3. A bank certificate. The client is requested to write a letter to his bank asking it to certify to the accountant as to the following matters as at the close of business on a certain date:

(a) The balance of the bank account.

(b) A list of notes payable or loans, showing the respective dates made and due.

(c) A list of any notes, securities, accounts receivable, etc., assigned to the bank as collateral or held by them for safekeeping or for collection.

(d) A list of notes discounted by the bank.

(e) A statement of guarantees or indorsements on other notes or loans held by the bank.

This letter is mailed personally by the staff accountant and the bank should be requested to send the reply direct to the accountant's office.

In the examination of banks numerous other forms of verification certificates are used.

Reports and Certificates

After an engagement has been completed and the staff accountant's rough draft report and working papers have been examined by the supervising accountant in charge, the partner responsible for the work examines the working papers to determine principally whether the report correctly interprets the client's financial condition, and whether the audit has been made in sufficient detail. Should any part of the work appear to be incomplete, or the information in the working papers be insufficient for rendering an opinion on certain phases of the work, the staff accountant amends or amplifies his draft report as required, after which it is turned over to the manager of the report department to be typed in the standard form used by the firm. After going through the routine of the report department the report is sent to the interested partner for signature before being mailed or delivered to the client by the correspondence department.

As many business men do not understand the technique of

accounting, the statements in the report are supplemented with enough comments to make them easily understood. The writing of a good report is an art in itself and part of the training of the junior is to familiarize himself with the style of report he may be called upon to write when in charge of an engagement as a senior.

As the public accountant is responsible for the contents of his reports and statements, it is necessary for him to protect himself against misquotation from, or the wrong use of, the report submitted to a client. Most of the large firms append to their reports a statement worded somewhat as follows:

> It is understood that if this report and statements, or any part thereof, be published, that it be published in its entirety; or should only extracts therefrom be published, then such extracts must be submitted for our approval before being published.

Auditors' certificates are as a rule very brief. In them the auditor states at the bottom of the balance sheet his opinion of the financial condition of the business examined. The two specimens to follow illustrate the general character of an auditor's certificates:

> We have examined the books of the Knoxfraud Manufacturing Co., Inc., of New York for the year ended December 31, 19—, and certify that the attached Balance Sheet is in accordance therewith and, in our opinion, is properly drawn up so as to show the true financial condition of the Company as at December 31, 19—, and that the relative Profit and Loss Statement is a correct record of its operations for the year ended on that date.
>
> January 15, 19—
>
> ....
>
> Certified Public Accountants

> We have made an audit of the books, records, and accounts of the Rocky Mountain Railroad Company for the fiscal year ended June 30, 19—. We have verified the securities owned, the cash account, and other current assets; have examined the capital and property accounts, and the items entering into the Income and Profit and Loss Accounts, and,

We hereby certify, that the attached Consolidated Balance Sheet correctly sets forth the financial condition of the Company on June 30, 19—, that the accompanying Statement of Income and Profit and Loss is correct, and that the books of the Company are in agreement therewith.

July 31, 19—

....

Certified Public Accountants

It is apparent that the value of a certificate depends on the degree of its freedom from qualification.

Filing of Reports

Carbon copies of the reports delivered to clients are retained by the report department for the files of the firm. Here, also, are kept the files of working papers, permanent file, and accountants' time sheets. To provide for the increasing number of reports on file, a loose-leaf record (Form 5) is maintained showing in alpha-

Name *Knoxfraud Mfg. Co. (N.Y. Branch)* Our Office *New York*
Address *169 Wall Street, N.Y.* Report Class No. *1500 K*
Working Paper File No. *3484*

Description of Work	Copies Typed	No. of Copies Delivered	To	Date
*Audit, year ended Dec. 31, 19_*	*4*	*3*	*W. Atkins, Pres.*	*Jan. 28/__*

Form 5. Loose-Leaf Record of Reports Delivered

betical order the names of clients to whom reports have been delivered. To illustrate the method of filing a report and working

papers, assume that the work has just been completed on the first audit report of the Knoxfraud Manufacturing Company's accounts as at December 31, 19—. A loose-leaf form is numbered for indexing purposes and thereon are entered the name and address of the client, the name of the officer to whom reports are to be delivered, and the dates on which the accounts were audited. If, for instance, the report covers the 3,484th engagement of the firm, the working papers and accountant's time sheets are so numbered and filed under that number. The Knoxfraud Manufacturing Company, being the makers of check-writing machines, is classified under manufacturers of office appliances. If the class number for that line of business happens to be 1500, the report would be filed under that class number and section K, the first letter of the name.

Branch Offices

Since, as previously stated, the larger public accounting firms maintain branch offices in the principal cities of the country, in cities where a firm's business does not warrant a branch office, arrangements are usually made with accountants of standing to act as agents or correspondents. The branch business is transacted in the same manner as at the main office, and branch managers often receive their appointments through their record of achievement at the main office. When an engagement is handled exclusively by a branch office, the branch manager signs the report, a copy of which is submitted to the main office for the reason that the senior partners are responsible for the opinions and accuracy of reports rendered under the name of the firm. A firm may be subjected to criticism for allowing branch office managers who are not certified accountants to sign reports. Should the staff of a branch office audit the local accounts of a company whose principal office is located in the city where the main office of the accountants is situated, the working papers covering the accounts examined would be forwarded to the office which is to render the report.

The reports sent by the branch office to the main office depend upon the kind of accounting system maintained at the main office. The reports in any case include a list of engagements secured, those to be commenced, and those which have been completed and are billed.

Terms of Engagement

A professional firm sells its service and where this service is rendered in part by the employees of the firm, a charge must be made proportionate to the skill and experience of the persons whose time is occupied in the service of a client. The profit on an engagement is the difference between the fee charged for the work done and the full cost of the engagement, which cost should include besides the labor cost a fair proportion of the office overhead expense and any direct expenses incurred on the engagement, such as traveling expense, postage used in securing verification of customers' balances, etc. Traveling and hotel expenses are sometimes quoted to the client on a guaranteed day basis in which case there is usually a profit or a loss on these items.

Engagements are taken either for a fixed fee to be paid when part or all the work is completed or on a per diem basis, i.e., a definite daily charge is made for the time of each junior, senior, and partner engaged on the work plus the time of the report department spent in preparing reports. It should be understood that the charge made is for the type of work to be done and not for the men used on the work. Thus if the work to be done is junior work, and a staff senior is assigned to it, the client is charged for his services at the junior's rate. Good management in the accountant's office does not allow this to happen often. As a general rule the client prefers the work to be done for a stipulated fee, whereas it is fairer for the accountants to base the charge on time. An audit may and frequently does require a more thorough investigation of the records than at first seemed necessary to furnish the client with the required information. If then the fee has been definitely predetermined, the auditors

may either incur a loss which naturally they are loath to do or they must charge the client more than the stated fee to which he may be equally unwilling to consent, or the thoroughness of the investigation must be sacrificed. This latter course is especially unsatisfactory to both auditors and client. For these reasons, a frequent practice is to charge for the work to be done on a per diem basis, with, however, a maximum fee. If the audit reveals that a more detailed examination of the books is necessary than is arranged for when the contract agreement is made, the extra work is done only after the client has consented to the additional charge for such work. This method of charging for the work proves in practice the fairest arrangement for both auditors and client.

Costing an Engagement—Time Reports

Accounting for an accountant's office does not differ, in the main, from standard accounting methods and practice. The practice and procedure peculiar to accounting offices are concerned largely with the problem of costing and that of income. The problem of income is discussed on pages 456–460. That of costing will be considered here.

The problem of costing is mainly that of keeping track of all time spent on the engagement and all expenses incurred directly in connection with it. The basis for the allocation of time to the engagement is the time report which must be turned in by every person—partner, supervisor, staff accountant, report department clerk, etc.—spending time directly chargeable against the engagement. In some offices a daily report is made out; in others this is done weekly. Regardless of when the report is made out, it is customary for the staff accountants and partners to keep a record of their time spent on an engagement, the nature of the work done, and other similar data, in diary form. In some offices an accountant's diary is used for this. In others a report similar to Form 6 serves the same purpose. Time reports must be turned into the office at the end of the week and at the end of the month,

when the last day falls before Saturday, for the portion of that week.

In some offices members of the staff are asked to turn in two reports, one the diary form referred to above, the other a summarized report showing total time spent on each client for the week.

KNIGHT AND DAY
Certified Public Accountants
New York City
DETAILED TIME REPORT

Of *F. Wilson* engaged on *Southern Glue Co. Atlanta, Ga.*
For Week 4 days ended *July 18, 19*– Accounts examined *Yr. ended June 30, 19*– *(Audit)*

Accounts or Books	Description of Work	Time (Hours) Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Total
General Ledger	*Trial Balance*	3						3
" "	*Analysis of Accounts*	5	8	8				21
Properties	" *of valuations of fixed assets*				8			8
	Total Hours	8	8	8	8			32

Signed *F. Wilson* Accountant in charge *H. Anderson*

Form 6. Accountant's Time Report for Each Client

The summarized form (Form 7) is the basis for charging the client's account and also for costing the engagement. Form 8 is a combination of Forms 6 and 7, except as to the expense report feature, and is the more usual type. It will be noted, also, that Form 7 gives the basis for the charge to unassigned time and to the client's account for expenses, as explained on page 460.

For engagements handled on a flat fee basis and also for the purpose of making an audit program for subsequent use, another analysis of time reports is sometimes made. On the initial audit, it is apparent that certain features must be investigated more

thoroughly than will be needed at subsequent audits. It is therefore desirable to analyze the total time spent on such engage-

KNIGHT AND DAY
Certified Public Accountants
New York City

ACCOUNTANT'S REPORT

for the Week *6* days ended *July 25* 19

Name *F. Wilson*

Address *New York City* Attached to *N. Y.* Office

Client	Time (Hours)							(Salary Rate For Use of Bookkeeping Dept. Only)
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Total	
Southern Glue Co.	*8*	*8*	*8*	*8*			*32*	*$54.50*
Mechanics Hardware Co.					*8*		*8*	*13.70*
Unemployed						*4*	*4*	*6.80*
	8	*8*	*8*	*8*	*8*	*4*	*44*	*$75.00*

Expense Account

Date	Receipts	Amount	Date	Disbursements	Amount
July 12			*July 12*	*R.R. Ticket So. Glue Co.*	*$40*
	Cash N.Y. Office	*$60*	*July 15*	*Belmore Hotel*	*10*
	Total Receipts	*$60*		Total Disbursements	*$50*
	Balance due Acct.			Balance Due Office	*10*
	Total	*$60*		Total	*$60*

Remarks

Examined and found correct *H. Anderson* Accountant in charge

Form 7. Accountant's Weekly Summary Time and Expense Report

ments on the basis of the type of work done so that when subsequent quotations are asked for, definite data will be available on which to base them. This time report summary (Form 9), which

is made up from the detailed reports on Form 6, is valuable also in checking any marked difference in costs as between different audits of the same business. For the employees of the report

KNIGHT AND DAY
CERTIFIED PUBLIC ACCOUNTANTS
120 BROADWAY
NEW YORK

REPORT OF MR.____________

RATE PER HOUR

FOR WEEK ENDING____________19___

CASE	HOURS								AMOUNT		LEDGER FOLIO
	Sun.	Mon.	Tues.	Wed.	Thu.	Fri.	Sat.	TOTAL			
TOTALS (CHARGED TIME)											
TOTALS (UNCHARGED TIME)											
TOTALS											

HOURS ENGAGED			DETAILS OF WORK	UNDER DIRECTION OF
FROM	TO	TOTAL		
			SUNDAY____________19___	
			MONDAY____________19___	

NO.

Form 8. Summarized and Detailed Time Report

The reverse side provides space for detail of work for the remaining days and for the signature of the accountant

department—typists, checkers, clerks, etc.—and all others whose time can be charged directly to the engagement, a time report similar to that required of the staff is used. Form 10 is typical.

KNIGHT AND DAY
Certified Public Accountants
New York City

TIME REPORT SUMMARY

Engagement *Hanover Trading Co.* Address *New York City* Engagement No. *4115*
Description of Work *Audit, Year ended June 30, 19—*
Work Commenced *July 6, 19—* Finished *August 10, 19—*
Accountant in charge *H. Anderson* assisted by *F. Wilson & R. Emerson*

Description of Work	Accountant's Initials and Time (Hours)					
	H.A.	*F.W.*	*R.E.*	*F.E.*		Total
General Ledger-Trial Balance & Statements	*15*					*15*
" " Analysis of Accounts	*20*					*20*
Cash Book-Reconciliation of Accounts etc.		*6*	*2*			*8*
Voucher Register-Vouching & examination		*4*				*4*
of entries, distribution, etc.		*8*				*8*
Sales Book-Comparing duplicate invoices			*8*			*8*
Testing footings & postings			*10*			*10*
Purchase Book: Checking postings		*5*	*5*			*10*
Comparing with receiving		*2*	*2*			*4*
dept records						
Examinations of minutes, contract, etc.	*3*					*3*
Supervision of Work, etc.	*2*			*5*		*7*
Total Time	*40*	*25*	*27*	*5*		*97*

Partner's Approval *F. Edwards* Date Billed *Aug. 31, 19—*
Remarks:-

Form 9. Summary of Time Spent on Engagement

KNIGHT AND DAY
Certified Public Accountants
New York City

OFFICE TIME REPORT

for the *6* days ended *August 14* 19__

Mr. *J. Smith*
Address *Brooklyn N.Y.*

Client or Account	Time (Hours)							(For use of Bookkeeping Dept. Only)		
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Total	Folio	Rate	
Southern Glue Co.				*4*			*4*	*49*	*$ 3*	—
Hanover Insurance Co.	*8*	*8*	*8*	*4*	*8*		*36*	*53*	*27*	—
Expense Accounts Miscellaneous										
Bookkeeping Dept.										
Correspondence Dept.										
Stationery Deot.										
Filing Dept.										
Library Dept. Exp.										
Report Dept. General						*4*			*3*	
Office General										
Unassigned										
Sickness & Late										
Holiday & Vacation										
Total Time	*8*	*8*	*8*	*8*	*8*	*4*	*40*		Total Salary *$ 33*	—

Form 10. Office Time Report

Cost Ledger—Not Controlled by General Ledger

It is the almost universal practice to make the cost records statistical, i.e., not to tie them into the general books. Form 11 is a typical cost ledger account. Entries for time and expense are made from the weekly time and expense report of each accountant or office clerk on the engagement and from the office petty cash or other record for expenses incurred from the head office.

Determining the Costing Rate for Salaries

Practice varies in determining the salary rate for cost purposes. In some firms the regular salary rate, i.e., the pay-roll rate, is used, all other expenses going into overhead. Thus, in addition to the customary overhead items, the expenses of unassigned time, vacation and sick pay, etc., are included. The better practice—though entailing a little more initial work—is to determine a salary rate for each man of the regular staff of such an amount as will include these items of unassigned time, etc. This seems a more logical practice, for, from the standpoint of a man's earning capacity, his cost per day is not on the basis of his weekly or monthly wage but rather his yearly wage divided by the number of days of his productive employment. In this way these expenses are made to follow each man and are allocated to the engagements to which he is assigned. Their inclusion in general overhead has the effect of allocating the unassigned time of high-priced employees both to the work on which they are engaged and to other engagements on which they spend no time, thus loading the less important engagements with a portion of the expenses which the more important work demanding the higher type of ability should bear. To determine a man's cost rate under this second method, his average productive time during a year is divided into his year's salary, the quotient being his per diem rate for cost purposes. A rate card is made up for the entire staff and used by the cost ledger clerk in making his extensions. Theoretically, the rate for office employees should be similarly deter-

Eng. No.__________ Client__________

Work__________

Period__________ Address__________

Terms__________

Accountants	Class	Accountants' Hours and Expenses-Week Ended							Salary Cost Rate	Salary Cost	Overhead	Total Cost	Accrual	Margin	Chargeable Expense	Billed	Paid
Month of ______							Total										
							D	H									

Form 11. Engagement Cost Account

mined. Practically, this may not be worth while. Partners' rates for costing purposes are more or less arbitrary.

Handling Overhead

Practice also varies in the use of overhead rates and in their determination. Some firms "cost" the engagement only as to direct time and expense. Others allocate overhead also. The basis used for the distribution of overhead is a time rate—a productive hour rate. The sum total of overhead expense divided by the productive or chargeable hours of the staff for the same period gives an hourly rate. The chargeable hours on a given engagement multiplied by this rate gives the burden for that engagement. In some firms a more conservative practice divides the total overhead expense by the chargeable time of the permanent staff only—not the entire staff—to determine the rate. Some provision for fluctuations in volume of business from year to year must, of course, be made in the establishment of an overhead rate. The method just referred to for this purpose is certainly a conservative one and should usually occasion a pleasant surprise when the final results are made up from the financial records.

The Margin column on the cost ledger sheet (Form 11) is used to record the difference between the amount for which a flat-rate engagement is undertaken and the amount of earnings accrued to date, as shown by the Accrual column. This information is of value from an administrative standpoint as indicating the "margin" available for the work yet to be done on the engagement.

Theories of Income

Per Diem Basis. In connection with the handling of income, some pertinent problems are met. Some firms do not take into current income any earnings until the work has been billed to the client; others take all income as earned, i.e., each day's earnings of the staff and other departments are treated as income belonging

to that day and to be taken into profits. This is usually spoken of as the "accrual" basis for taking earnings into the accounts. Practice in this regard varies somewhat and is complicated by the two types of contracts entered into with clients. On per diem contract work there would be little or no objection to booking the income as earned day by day. In some cases, however, a reserve on all unfinished engagements—ranging as high as 15% to 20%—is set aside to cover contingencies, the remainder going into income. Due to inability to supervise in minute detail all work of the staff, it sometimes happens that work is done which cannot appropriately be charged to the client. This occurs so infrequently in well-managed organizations as to make the practice of setting aside a reserve against which such work may be charged savor of extreme conservatism.

Flat Rate Basis. On the other hand, on flat rate contract work, the problem is not so simple. Public accounting is a seasonal business, the 5 months of the late spring and summer being usually the slack period. The peak load naturally comes near the end of the calendar year when the periodic fiscal work must be handled and preparations made for the tax work. Shifting some of the burden of this work to other periods of the year is desirable. The flat rate contract serves this purpose in a great many instances by making it possible for the accountant to do some of the related work not wholly dependent on the entire fiscal period at such time as his staff is less strenuously occupied.

Under the terms of the contract, payment by the client may be yearly or periodic, as billed. Just as in all flat rate contracting business, the degree of certainty of the margin of profit depends largely on the care with which the estimate is made and the background of experience or records on which it is based. Work of this kind is often done on a closer margin than other work. To hold together a staff of thoroughly dependable and competent men it is necessary to provide all-the-year-round employment. Unassigned time is a heavy drain on profits and must be kept at the lowest possible point consistent with holding the staff together.

Accordingly there is quite a factor of uncertainty in flat rate work and this often finds reflection in the accounts by keeping this class of work separate from the other. When kept separate it may be handled in different ways, the outstanding features of which will be discussed.

1. By one method a Flat Rate Contracts account and a reserve are set up, to which are charged and credited respectively the costs of the work as they accrue. When the client is billed for any part or all of the work in accordance with the terms of the contract, the amount of such billing is taken into income and the contract account and its reserve are adjusted to the extent of the work billed by means of a reversing entry. This, of course, necessitates a reliable cost system. The contract account and its reserve thus show by their balances the accrued costs on all such work and provide the basis at the end of the period, either for deferring these costs carried regularly in the expense accounts, or for taking such a conservative share of profit on the work done as facts and experience seem to justify.

2. Under a second method the contract account and its reserve are charged and credited respectively at selling price with the services rendered. When the client is billed, the amount of the billing is taken into income and the contract account and its reserve are adjusted by the same amount. The balance in these accounts will show: (a) if the engagement is complete, the amount of the excess or deficit of the flat rate fee over or under the regular selling price of the service; (b) if the engagement is not complete and the billing is the sales price of the service to date, there will be no balance; and (c) if the engagement is not complete and the billing is an agreed sum, as per contract, the balance means nothing unless the amount of service rendered to date bears to the total estimated service necessary the same ratio as the billed amount bears to the total contract price. The two accounts, however, provide when the engagement is complete a basis for judging the sufficiency or insufficiency of the contract price.

3. Under a third method the contract account and its reserve are debited and credited respectively with the amount of the contract price. As the client is billed the amount is transferred from the contract account to the client's account. Accruing costs are charged against the reserve, the balance of which shows the gross profit or loss on the contract.

Usual Analysis of Income

These theoretical refinements are not often met in practice, the accounts more often providing—instead of the analysis of income as between kinds of contracts—an analysis of the income on the basis of kinds of work. Some firms segregate income thus:

1. Audits
2. Investigations
3. Cost accounting and systems
4. Tax work
5. Miscellaneous

Sometimes costs are segregated similarly and must be if the relative value of the different kinds of work is to be shown by the accounts. However, like the shoes of the shoemaker's family, an accountant's accounts oftentimes do not carry the refinements he suggests for others. The size and type of the organization are the determining factors here, as elsewhere.

Method of Booking Income

The method or medium used for recording income will depend upon the theories of income discussed above. As a matter of principle, a regular accounting routine must be established and adhered to. Thus if accruals are to be the basis of recording income, provision must be made to bring earnings on the books as they accrue. If income is not to be taken till the client is billed, earnings must be carried on memorandum until then. In this latter case, a combination cost and accrual income ledger may well serve the purpose, to which postings are made direct from the time sheets of staff and office. The billing record or journal will

then be the medium for bringing the income into the accounts. This may be the duplicate invoice loose-leaf record with recapitulation sheet for establishing the control for the general ledger and making any desired analysis or the more formal journal record. Expenses incurred in behalf of a client may be charged either direct to the client's account at the time of disbursement or through the billing record, in which case the offsetting credit will be to Accountants' Traveling Advances, Expense Funds, or other suitable account to which the original charge for the cash advanced was made. The amount of expenses chargeable to clients comes from the expense reported by the accountant as per weekly time and expense sheet, the report department time report sheets, and the office record of expenses incurred on the client's account. If a flat rate for expenses has been quoted the client, that, of course, is the basis for entry to the client's account.

For booking income on an accrual basis a service and expense journal or earnings accrual record is used. Entries to this are from the time and expense reports of staff and office force. Form 12 shows such a record, which is combined with a time analysis section for posting to various salary accounts. Under each client's name are listed the names of accountants and office employees engaged on the client's work during the week. Columns are provided for the time chargeable to client, the rate quoted, amount, chargeable expense, and total.

The sums of the Amount and Expense columns are charged periodically to the accrual section of the client's account, as explained on page 462. To the general ledger, the total for the month of the Amount column is credited to Professional Earnings account, the total of the Expense column is credited to Expense Advances account, and the total of the Total column is charged to Unfinished Engagements. The "Chargeable Time" and "Expense" are the same amounts as those entered in the cost ledger. The entries to the pay-roll section provide for distribution to the indicated accounts. The total of this section is credited to Pay-roll account; the distributive columns are charged to their respective

Name of		Class of Accountant	Chargeable Time		Rate	Amount	Expense	Total	Time Analysis						
Client	Accountant		Days	Hours					Rate	Total	Chargeable	Unassigned	Sundry	L.F.	Explanation

Form 12. Service and Expense Journal

accounts. If salaries are paid twice a month, the entries from this time analysis section should, at the end of the month, just "clear" the corresponding pay-roll account or accounts charged from the voucher register or cash book.

The Clients Ledger

Form 13 shows a type of clients ledger designed to show both accruals and billings. The two sections make this possible. From the service and expense journal, charges are made to the Accruals section of the various clients' accounts, the total of which will be charged to an Unfinished Engagements account on the general ledger. When the client is billed—through the duplicate invoice record with recapitulation sheet as explained above—he is charged in the Charges section of his account and credited in the Accruals section. Periodically, the totals from the recapitulation sheet are charged to Accounts Receivable and credited to Unfinished Engagements on the general ledger. Thus, at all times the latter account controls the Accruals section of the clients ledger, while the Accounts Receivable controls the Charges section.

The record for handling flat rate contracts, if they are kept separate from per diem work, will, of course, depend on the method adopted, i.e., the theory in accordance with which they are to be handled as explained above.

Other Records

The other records used by an accounting firm do not differ from those used elsewhere—suitable voucher records to record expenses and purchases, and cash books, petty and general, for controlling cash.

Financial Statements

No peculiarities are found in the balance sheet of a firm of accountants. A typical form of profit and loss statement follows. The difference between earnings from engagements and the first or direct cost of those earnings corresponds with the gross profit

Name________________

Address________________

CHARGES						ACCRUALS					
Date	Particulars	Contract No.	Folio	Debits	Credits	Date	Particulars	Contract No.	Folio	Debits	Credits

Form 13. Clients Ledger

of a trading concern. Where income, or both income and direct costs, are departmentized the customary analysis by departments would be shown in the statement.

STATEMENT OF INCOME AND EXPENSES
FOR THE YEAR ENDING DECEMBER 31, 19—

Income:				
Fees for professional service				$......
Direct Cost of Income:				
Salaries, Accounting and Report Department:				
Chargeable to Clients		$......		
Non-chargeable, Unassigned, and Vacation		......		
Late Work		......	$......	
Traveling Expenses and Subsistence account of clients (Excess over amount charged clients)			......	
Miscellaneous			......	
Total Direct Costs				......
Net Accountancy Income				$......
General Administrative Expenses:				
General Salaries		$......		
Rent		......		
Correspondence and Mailing		......		
Postage		......		
Telephone and Telegraph		......		
Stationery and Binders		......		
Traveling Expense and Subsistence—General		......		
Report Department—General		......		
Library Expense		......		
Clubs, Societies, etc.		......		
Contributions		......		
Gratuitous Work		......		
Depreciation		......		
Miscellaneous		......	$......	
Financial Management Expense and Income:				
Bad Debts	$......			
Interest Cost	......	$......		
Less—Interest Income and Dividends		......	......	......
Net Profit				$......

CHAPTER XIII

ACCOUNTING FOR AN ADVERTISING AGENCY

By T. L. Woolhouse

Inception

An advertising agency is usually conceived and promoted by one or more individuals who have had either training and experience in this highly specialized service in another advertising agency, or the advertising managership of some extensively advertised product.

To obtain recognition from the associations that guard the ethics of the profession it is necessary to have at least three substantial accounts. This recognition, when granted, entitles the agency to the usual commissions and cash discounts allowed by publishers to all agencies in good standing. This commission, generally 15%, is the margin of profit that the publisher allows an agency as compensation for services rendered—and is not allowed to advertisers who place their publicity direct.

Development

The agency, while actually paid by the publisher or similar party for developing business, is also the guardian of the advertisers' interests. The publisher realizes the value of the agency to him and often co-operates to a great extent to make the advertising profitable so that pleasant business relations may exist between the publisher and the agency, and the agency and its client.

In view of this, it is the duty of the agency to fulfil its obligations to both parties by being properly equipped to meet the various requirements of each. To meet these conditions the agency begins operations in a small way with the minimum num-

ber of clerks that are required. As the agency develops, either through the growth of the initial accounts or the addition of other accounts, the office staff automatically grows in number to meet the demands of the increase in detail work—which eventually makes it necessary to form definite departments.

In the early stage of development the accounting of the agency is not complex. The agency has no stock-in-trade; its equipment consists of office furniture and supplies; its accounts receivable are principally charges made to customers for services rendered or advertising space in certain media; its accounts payable represent the claims of publishers or others against the agency for space or services which the agency authorized in behalf of its clients.

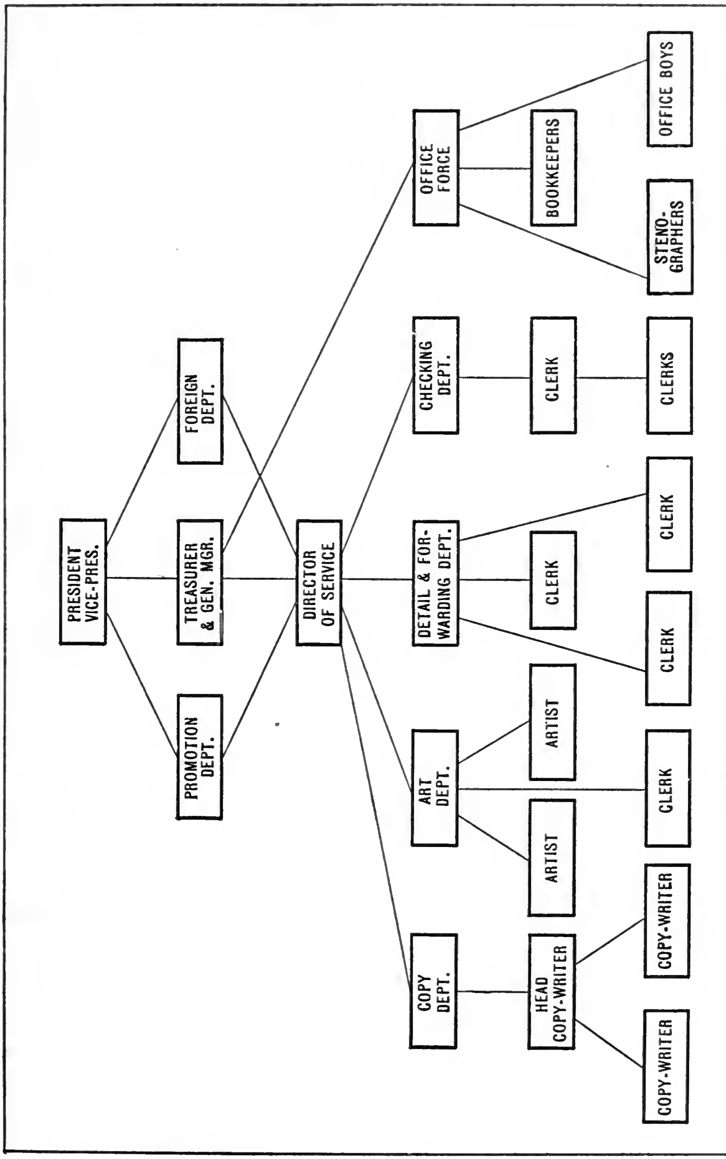
Because an agency usually grows slowly and the advertising business does not lend itself readily to standardization and systems, the departmental organization is different in each agency. A typical agency organization is shown in Form 1.

As methods of accounting are not uniform, variations are to be found in the forms and records kept in every advertising agency office. For this reason it is impracticable to present in stereotyped form a system of accounting applicable to agency work in general. The logical plan is to describe the departmental organization and methods of accounting of an agency with a large clientele. The study of agency detail with its most complex conditions—the principles of which, as previously explained, are fundamentally simple—should give the student sufficient knowledge of the technical side of the business to make intelligible the "why and wherefore" of the different forms and methods used.

Functions of Agency Work

Before taking up the details of the accounting system, it is advisable to consider the duties or functions common to all large agencies and the organization required in their performance.

An agency, broadly speaking, is the advertising department of each of its clients. In this capacity it should hold itself in readi-



Form 1. A Typical Advertising Agency Organization Chart

ness to offer advice or services for the betterment of its clients' businesses. It should know every phase of marketing a commodity or object, and should advise, when possible, reduction in manufacturing cost or overhead expense, alteration of form or dimension of product, determine selling price, and act in a general way as counsel in everything that affects successful selling.

The following are the general duties of an agency:

1. Selecting the media, that is, determining whether one or all of the following can be profitably and practically used for advertising purposes: newspapers, magazines, circulars, novelties, billboards, electric signs, street-car cards, personal letters, programs, etc.
2. Preparation of copy for advertisements, illustrations, plates, novelties, booklets, circular letters, and other publicity material.
3. Issuing instruction to publishers and keeping a record of the appearance, space occupied, and position of advertisements.
4. Making payments to publishers or others for insertions and services and charging the advertiser on one bill, if possible, for the month's work.

The Agency a Middleman

Such is the routine work which the agency, acting as a middleman between advertiser and advertising medium, performs for no increased cost to the advertiser; for the chief income of an advertising agency, as before noted, consists of the commissions given by publishers on the purchase and sale of advertising space.

For example, an announcement placed direct in a newspaper by an advertiser would be charged to him at a specified rate per line and no service to speak of would be rendered. The same business placed through an advertising agency would cost the same and would relieve the advertiser of the task of writing the advertisement, attending to the details of insertion, checking the

advertisements as they appear, and he would receive one bill at the end of the month for this item and any others that may have been authorized. In fact, it is more economical for the advertiser to place his business through an agency, for if he handles the business direct he must pay for the services of a copy-writer and for the clerical work involved. The only charge of the agency, in addition to the regular space rate, is the cost of any art work and the cuts or plates if such are required to illustrate the advertisement.

Departmental Divisions

To carry out the functions described on a preceding page, the work of the agency is divided among the following departments, each of which performs a specific duty:

1. Plan and Copy
2. Art
3. Forwarding
4. Printing
5. Rates and Statistical
6. Promotion
7. Mechanical
8. Bookkeeping
9. Auditing
10. Billing
11. Stenographic
12. Checking
13. Filing
14. Export
15. Recording

Some of these functions are common to all businesses and require no description. Others need brief explanation.

Plan and Copy Department. This is the factory of ideas, where originate the form and matter for all advertisements. Trained writers prepare the text matter, which is often adapted to certain illustrations furnished by the advertiser. In many other cases the text is the foundation upon which an illustration may be built.

Art Department. The work of this department is to prepare drawings or paintings from the "layout" received from the copy department. This department also attends to the making of plates and the design and purchase of printed matter. The

plates consist of electros, zincs, stereotypes, half-tones, matrices, etc.,—terms that are defined at the end of this chapter.

Forwarding Department. This department's duties consist of mailing to the publisher the completed copy of the advertisement with instructions, and the electrotypes or matrices to be used.

Printing Department. This department, where it exists, prints catalogues, booklets, street-car cards, folders, multigraphed letters, etc., depending upon the extent of its equipment. The majority of agencies turn over this work to outside printers.

Rates and Statistical Department. The publications for the advertising campaign are selected and a file of publishers' rate cards and circulation reports is maintained by this department, whose duty it is to select the publications or media that are best fitted to meet requirements of the contemplated campaign. Contracts are made with different publications for a certain amount of space to be used within a year or a shorter period.

Promotion Department. This department solicits new business through correspondence and personal interviews, developing "prospects" into clients.

Mechanical Department. Here electrotypes, matrices, original zincs, etc., are made if the equipment includes that of a foundry for making electrotypes, and a hydraulic steam press for the making of matrices. Such work, however, is more commonly entrusted to outside concerns.

Bookkeeping and Auditing Departments. The functions of the bookkeeping department call for no special mention. The auditing department makes payments to the publishers and other creditors for the space used. Such creditors as a rule render their invoices on the 30th of each month for the current month's advertising. Some invoices are due on the 10th of the month following service, others on the 15th or the 20th, with a cash discount for prompt payment. The auditors file the bills in their respective discount order and immediately commence to audit. The duplicate of the original order is referred to, the space is

tabulated and checked against publishers' invoices, and, if correct, settlement follows in due course.

Checking Department. The verification of the appearance of advertisements in periodicals, newspapers, street-cars, or on billboards is entrusted to this department. Newspaper and magazine advertisements have to be measured and the position ordered or requested for an advertisement needs to be verified. The measurement of newspaper advertisements is determined by what is termed "agate measurement," in which 14 lines equally spaced constitute an inch one column wide. Regardless of the type or illustration, the measurement of display advertisements is taken from the black rule at the top to the one at the bottom of each advertisement. If the advertisement is 6 inches high and extends across three columns, the space occupied would measure 252 lines. Advertising rates are based on lines or pages. If special positions or pages have been ordered the checking clerks must detect any irregularity in this matter, as well as in the general appearance of each advertisement. Usually the rate and statistical department's order for space covers a yearly or season schedule. In checking advertisements, the paper is examined thoroughly, each client's advertisement is noted, and its measurements and location are marked on a customer's checking card to be described later. Often advertisements are omitted through oversight or carelessness, and as soon as discovered the matter is taken up with the publisher and another date of insertion is arranged for.

Filing Department. This department contains the usual general correspondence file and also a newspaper and magazine file. After newspapers and other periodicals have been checked they are filed in bins or racks alphabetically by states and cities and for the larger cities in a separate compartment for each paper.

Export Department. This department deals with the promotion of foreign advertising and, where it exists, is operated as a branch business. Few advertising agencies have such a depart-

ment, the placing of advertisements in foreign countries usually being done through special agencies.

Recording Department. Upon the completion of the month's advertising schedule, the checking cards (Form 5) are passed to this department for the purpose of recording on the contract sheet (Form 6) the value of space utilized and thus have these data in order to check the publishers' bills.

Books of Account—Cash Book Ruling

The accounting work in an advertising agency differs from that of a mercantile house chiefly in the method of handling the

Dr.

Date	DETAILS	Ledg. Fol.	Accounts Receivable				Discount Allowed	News-paper Accts. Pay	General Ledger	Private Ledger	Miscel.	Total Receipts
			A-E	F-K	L-Q	R-Z						

Form 2. (a) Cash Book (debit side)

Cr.

Date	DETAILS	Voucher	Ledg. Fol.	Newspaper Accounts Payable				Sundry Accounts Payable	Discount Earned	General Ledger	Private Ledger	Accounts Receiv-able	Total Disburse-ments
				A-E	F-K	L-Q	R-Z						

Form 2. (b) Cash Book (credit side)

sales records. The sales of the agency consist of advertising space sold to its customers and purchased from publishers who hold the agency responsible for payment. For space sold, the client is charged and an income account, Advertising Sales, is

credited. To record the charge made by the publisher for this same space, an account, Advertising Cost, is charged and the publisher is credited. These credits are carried in the general ledger controlling account, Newspaper Accounts Payable. Since many cash adjustments are made with both customers and publishers, provision is made in the cash journals (Forms 2a and b) for making columnar analysis of these and other items for convenience in handling the control accounts.

The accounting methods of an agency differ from standard methods in that special records must be kept for the purpose of insuring the correctness of the charges to clients and for the purpose of checking up the bills received from publishers and other creditors. The features of this system that might confuse the uninitiated can best be made clear by describing the office routine, beginning with the preparation of copy and the contract for space.

Advertising Rates

A large advertising agency may utilize space in several thousand media and every publication has its own rate, depending upon the size and quality of its circulation. The rates of newspapers also vary for different classes of advertisements. To keep record of these various rates a file of publications is maintained, arranged geographically and by class of periodical. The file consists of a number of stout manila envelopes—one for each publication. On the outside of the envelope is noted the rate (per page, half- and quarter-page, etc., of a magazine, or, if a newspaper the rate per agate line for different styles of advertisements), the agent's commission, and the cash discount. Inside the envelope is filed the latest rate card of the publisher, data as to the circulation, and any correspondence relative to a change in rates or to special terms.

Though most publications have fixed rates and usually offer an extra discount for a series of advertisements, it does not follow that these fixed rates are "rock bottom." If an advertising

agency has sufficient business to contract for a large amount of space, it can sometimes secure special terms or special positions or both. Especially does this hold true of the less important periodicals.

Preparation of an Advertisement

In the preparation of an advertisement the first step, after securing a rough sketch and layout from the plan and copy de-

Job No. *7048* **REQUISITION** *February 2* 19—

WRITING and DESIGNING BUREAU

Please Prepare Copy as Follows

For *Brown's Bottling Company* and Charge *same*

No. Pcs.	Size Space	Description or Publications	Wanted	Delivered to
	3 S.C.	*Newspaper*		
		Submit pencil sketch for O.K.		
		Strong Heading Display		
		"Brown's Bottles"	*2/10*	
		Furnished Drawing wanted with 1		
		original plate and 1 electro. Hold		
		original zinc.		
		Set matter herewith and send com-		
		plete electro to the newspaper		
		(N.Y. Times)		*Complete plate to*
				J.H.J. 2/20

Remarks *Pencil sketch O.K. 2/11*

Finished Ordered by *J.H.J.*

Form 3. (a) Requisition Job Order (face)

partment, is to make out a requisition (Form 3) on the art department, specifying the nature of the work to be done. Such a requisition constitutes a job order and its function is to collect the costs of an advertisement or of a series of advertisements. The copy of large advertisers is usually changed for each inser-

tion and when a contract is made for a number of insertions it is customary to prepare several advertisements and deliver them to the publisher some time before the closing date for the first of the series. On the face side of the job order (Form 3a) appear the necessary working instructions for the advertisements to be prepared, and on the reverse side (Form 3b) are entered the cost of any drawings or cuts, and other special work.

As the advertiser usually pays for illustrations and cuts it is

Charge *Brown's Bottling Company* No. *7048*

Order No.	Check	Date	COST			Check	CHARGE		
17468	*A*	*2/20*	*Jones drg. in ink*	xx	xx	*A*	*Drawing layout and finished pen and ink*		
							drawing for display "Brown's Bottles"		
17475	*B*	*2/22*	*Smith Zinc line*				*for use in 3" s.c. newspaper advertise-*		
			plate	x	xx		*ment.*	xx	xx
17479	*C*	*2/27*	*Hall Ptg. Co. compo.*	x	xx	*B*	*1 Zinc line plate of above drawing*	x	xx
17504	*D*	*2/28*	*Ball Elec. Co. 1EB*		xx	*C*	*Composition for 3" s.c. newspaper ad-*		
							vertisement "Brown's Bottles are the		
					xx		*Best" with 30 proofs.*	x	xx
						D	*1 Electro of complete advt. 3" s.c.*		
							newspaper as above for insertion in		
							N.Y. Times-3/1.	x	xx
			Net Total	xx	xx			xx	xx

Approved *T.L.W.* To Bkkpg. Dept. *4/7—* Journal ______

Form 3. (b) Requisition Job Order (reverse)

necessary to distinguish between the intricate method of handling by the agency and the simplified method of making the charge to the advertiser. This distinction is made by dividing the requisition into two sections, one section showing the numerous detail operations required of the agency and the other the non-technical

and easily understood charge to the advertiser. After the charges have been entered on the requisition it is passed to the bookkeeping department, where the following entries are made:

Writing and Designing, Requisition 7048...........	$......	
Sundry Accounts Payable..................		$......
Brown's Bottle Company......................	......	
Writing and Designing, Requisition 7048.....		......
Commission Earned......................		......

The requisition is then filed by job number, and the number is posted to the customer's account for reference purposes.

Placing and Checking the Advertisement

The forms used to check advertisements placed with publishers consist of an order form made out in triplicate (see Forms

Advertiser *Brown's Bottling Co.* Publisher of *Times*
Town *Maywood* State *N.J.* Town *New York* State *N.Y.*
Edition *Daily* Space *3 inches* Period of *2 Months*
Position *Top of column next to reading matter*
Charge us $ *.XX line* Gross $ *.XX line* Net Cash Disc't. *X %*
Date *February 27* 19 — Remarks *Commence at once*

GAMUT NATIONAL AGENCY

Main Office,

NEW YORK,

Gentlemen:-

You will please publish as per instructions herewith or on copy the advertising as above scheduled.

(☞ *Insertion in part of issue of any date or 'No.' will not be accepted.*
This adv'g. to be printed alike IN EVERY COPY, of every date or 'No.' ordered.)

Papers to be sent to us regularly during term of this contract. Also ________ insertion to the advertisers direct.

Please signify your acceptance promptly by signing and returning attached duplicate. Electrotypes will then be forwarded. Do not set this advertising up in type.

Yours very truly,

GAMUT NATIONAL AGENCY

Per ____________

Form 4. (a) Order Form (original)

4a and b and the upper right-hand corner of Form 6), a checking card (Form 5), and copy schedules (Forms 8 and 9). The original is an order on the newspaper to run the advertisement, in this case of the Brown Bottle Company, daily for a period of two months, in the space of 3 inches, in full position, and at the terms and rates specified. The original and duplicate are sent to the publisher, who signs and returns the duplicate as an acknowledgment of the terms and conditions of the order. The third copy (Form 6) is filed in a binder in geographical order and contains the rates to be charged the customer, also numerous squares, one for each day of the year, for entering the insertions given. An extract of the heading of this form, showing the date, paper, position, length of contract, space, and insertion dates,

Advertiser *Brown's Bottling Co.* Publisher of *Times*

Town *Maywood* State *N.J.* Town *New York* State *N.Y.*

Edition *Daily* Space *3 inches* Period of *2 Months*

Position *Top of column next to reading matter*

Charge us $ .xx *line* Gross $ .xx *line* Net Cash Disc't. x %

Date *February 27* 19— Remarks *Commence at once*

GAMUT NATIONAL AGENCY

Main Office,

NEW YORK,

READ CAREFULLY
To make this order valid and to insure proper attention to your bills for the service this acceptance must be SIGNED and RETURNED immediately with Prices filled in.

GAMUT NATIONAL AGENCY
New York, N.Y.

Your order received and we hereby accept your contract and will publish as per instructions the advertising as above scheduled.

(☞ *Insertion in part of issue of any date or 'No.' will not be accepted.*
This adv'g. to be printed alike IN EVERY COPY, of every date or 'No.' ordered)

We will send papers regularly to you during term of this contract. Also ________ insertion to advertisers direct.

Publishers of ________________

Town ________________

WE AWAIT ELECTROTYPES BEFORE INSERTING.

Form 4. (b) Order Form (duplicate)
To be signed and returned by publisher

Feb. 27, 19— *N.Y.* *New York* *Times*

Top of column next to reading matter *Brown's Bottling Co.*

Daily *3 inches* *2 Months*

Remarks

No Papers Complaints
3/11 for 3/5

	JAN.			FEB.			MAR.			APR.			MAY			JUNE				JULY			AUG.			SEPT.			OCT.			NOV.			DEC.			
	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.		Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	Cut	Inch	Cor.	
1								3											1																			
2								✓											2																			
3								✓											3																			
4								✓											4																			
5								N.P.	✓										5																			
6								✓											6																			
7								✓											7																			
8								✓											8																			
9								✓											9																			
10								✓											10																			
11								✓											11																			
12								✓											12																			
13								✓											13																			
14								✓											14																			
15								W.P.											15																			
16								✓											16																			
17								✓											17																			
18								✓											18																			
19								✓											19																			
20								✓											20																			
21								✓											21																			
22								✓											22																			
23								✓											23																			W.A.-Wrong Ad
24								✓											24																			W.C.-Wrong Copy
25								✓											25																			W.P.-Wrong Position
26								✓											26																			O.C.-Old Copy
27								O.											27																			O.D.-Off Day
28								✓											28																			O.W.-Off Week
29								✓											29																			Inv.-Inverted
30								✓											30																			O.-Omitted
31								✓											31																			N.P.-No Paper
Total								84"	3"										Total																			R.-Repeat

Form 5. Checking Card

is entered on the upper left-hand corner of a checking card (Form 5).

The agency must check accurately all media used in order to make sure that contracts with publishers are carried out as agreed. Publishers must send the agency copies of all media from which the advertising placed therein by the agency can be checked. The checking card is used for this purpose. It consists of twelve columns, one for each month of the year. Each column is subdivided into three smaller columns, of which column one is used to designate the number of the advertisement, column two contains information as to the size of the advertisement and remarks, and column three is used exclusively for missing papers. These columns are cross-ruled and contain squares for each day's advertisement. The checking cards are filed in the same manner as all advertising matter, viz., by states, cities, classification of paper. Each day's mail is sorted by states and these in turn, are arranged in cities according to the alphabet. The papers thus sorted must correspond with the checking cards. The advertisements are marked with a heavy crayon and noted on the checking cards in their respective columns and dates. It will be noted upon reference to Form 5 that under date of March 5 no paper was received; the Brown Bottle advertisement was inserted in wrong position on the 15th and was also omitted on the 27th. At the conclusion of the day's checking, the papers are alphabetically filed in bins for future reference. These cards are totaled at the end of each month and entered on the contract sheet (Form 6) together with notations.

Form 6 is the basis for the charge to the client and also controls the agency's liability to the publisher for the space used. The gross monthly cost to the advertiser is set up in a column from which the customer is billed. A column is provided also to enable auditors to determine in which month this billing was made. A similar column is provided to show the exact cost to the agency. Supporting Form 6 is Form 5 giving the original check-up of the insertions on the basis of which both the charge to the advertiser

KEY:	
W.A.	Wrong Ad
W.C.	Wrong Copy
W.P.	Wrong Position
INV.	Inverted
O.	Omitted
N.P.	No Paper
O.C.	Old Copy
O.D.	Off Day
O.R.	Over Run
O.W.	Off Week
R.	Repeat

Price to Adv'r. $ *XXX line* *X* % Cash Disct. Advertiser *Brown's Bottling Co.* Publisher of *Times*

Remarks *XXX inch* Town *Maywood* State *N.J.* Town *New York* State *N.Y.*

Edition *Daily* Space *3 inches* Period of *2 Months*

Position *Top of column next to reading matter*

Charge us $ *XX line* Gross $ *XX line* Net Cash Disc't. *X* %

Date *February 27* 19 — Remarks *Commence at once*

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE		JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1			*3*				1						
2			✓				2						
3			✓				3						
4			✓				4						
5			*N.P. 3*				5						
6			✓				6						
7			✓				7						
8			✓				8						
9			✓				9						
10			✓				10						
11			✓				11						
12			✓				12						
13			✓				13						
14			✓				14						
15			*W.P.*				15						
16			✓				16						
17			✓				17						
18			✓				18						
19			✓				19						
20			✓				20						
21			✓				21						
22			✓				22						
23			✓				23						
24			✓				24						
25			✓				25						
26			✓				26						
27			*O.*				27						
28			✓				28						
29			✓				29						
30			✓				30						
31			✓				31						
Tot.			*84" 3"*				Tot						

	SPACE	RATE	Cost Advr.	M.I A.Cost	BILLED
JAN					
FEB					
MAR	*87"*	*XXX*	*XXX XX*	*XXX XX*	*4/10*
APR					
MAY					
JUN					
JUL					
AUG					
SEP					
OCT					
NOV					
DEC					
Tot					

Form 6. Contract Sheet

and payment to the publisher are made. The importance of these forms is apparent.

Newspaper Accounts Payable

As the invoice rendered by a publisher often covers the advertisements of several of the agency's clients, it is necessary to divide the charge into its component parts for the purpose of applying them against the debits of individual customers' accounts. The analysis is made upon a simple voucher form. The source of the information for making the analysis is found in the M. I. A. Cost column of Form 6. The total charge on any publisher's bill must reconcile with the total M. I. A. Cost columns, commissions to be considered, for all the advertisers covered by the bill.

Ledgers

The customers ledgers, in which are entered the agency's charges to its clients, call for no comment. The publishers ledgers, as illustrated in Form 7, are ruled to show the month covered by the invoice in order to ascertain the amounts due and paid. The study of Form 7 will be self-explanatory in the light of the preceding discussion.

Billing Customers

A schedule is maintained in the billing department which permits certain customers to be billed each day. This uniformly divides the work and also sends the client "invoice for services" at about the same date each month. The contract sheet (Form 6) filed in binders under the captions of Customers, States, Cities, etc., is the source for billing customers for the month's completed services. The rates and other information are noted on the order sheet in a prominent corner. On the customer's invoice the advertising space is tabulated and priced at the rate quoted. The space is then rechecked and is ready for billing. The service given is itemized by dates, space, and rates for each periodical in order

COMMISSION x %
CASH DISCOUNT x % x DAYS

New York

DR. CR. *Times*

	DATE 19—		EXPLA-NATION	VOUCHER	DEBITS	AUDITS AMOUNT	Date	Date	EXPLANATION	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	BAL-ANCE
	Apr.	*10*	*Cash*	*70431*	a/ XXX XX	XXX XX	4/6		*Browns*			a/ XXXXX										
	✓	✓	*Dis.*	✓	a/ XX XX	XX XX																

Form 7. Publishers Ledger

COPY SCHEDULE

ADVERTISER	Publication	Space	Issues	Forms Close	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Form 8. Copy Schedule for Newspaper Publications

that the client may verify the invoice readily. After all charges have been verified a copy of the invoice is placed in an invoice book or in a loose-leaf binder and the original is forwarded to the bookkeeping department for entry and mailing to the client. A recapitulation of these invoices gives the amount to be entered to the general ledger control account.

Other Forms

Two other forms peculiar to an advertising agency business are shown and described.

The copy schedule, illustrated in Form 8, is the record kept by the agency of the copy sent to newspapers. When dispatching copy a check mark is made in the squares representing the days of the month on which the copy is to appear in the newspaper named in the second column. Advertisers' names are listed on the sheets alphabetically for convenient reference, and the sheets are scanned daily to see that the necessary copy is supplied the publisher.

The somewhat different style of schedule illustrated in Form 9 is used to keep track of the copy sent to magazines or other monthly publications. Users of magazine space commonly advertise regularly in many media. For this reason a separate sheet ruled to cover a year's advertising is allotted to each magazine advertiser. The study of Form 9 will make clear the method of its operation, with the exception perhaps of one point—the letters in the first column. These letters refer to a series of advertisements and are used to distinguish one piece of copy or illustrated matter from another.

Closing the Books

Few complexities are met in closing the books of an agency. Bad debts, depreciation, and all deferred and accrued items must be taken into account. The only inventories are those of materials and supplies, which are usually small and are often disregarded. Because of the practice of charging to the client all

costs, as soon as incurred, the costs preliminary to the inauguration of a campaign, for copy, illustrations, etc., have all been charged and perhaps collected before the campaign starts. Thereafter only charges for space are made against the client and these are made monthly. At the end of the fiscal period all accrued charges, not yet billed to customers, are taken cognizance of.

GAMUT NATIONAL

Name, *Sherburne Manufacturing Co.* Address, *Salem, N.J.*

Designs, Copy, Etc.	Copy Sent	Position	Date of Order	Amt. Space Ordered	Rate	Dis-count	Cash Disc't	Forms Close	Publication
ABCDEF	10/15/–		10/1/—	*1 Page E.O.M.*	XXX.XX *time*	XX%	X%	*1 Mo. prec.*	*Artcraft Mo.*
ABCDEFGHIJKL	10/20/–		10/1/—	*¼ Page Mo.*	XX.XY "	XX%	X%	*2 Wks. prec.*	*Roycrofters*

Form 9. Copy Schedule for

Also material in process, where preparations for the campaign have not yet been completed, should be taken into account, usually on a cost basis. Costs of each job or contract are very carefully kept, being accumulated through the various departments of work by means of the envelope system. Such costs are carried currently in the account, Writing and Designing, from which they are charged to the client when the job is completed.

Glossary

To complete the discussion of advertising agency accounting, a glossary follows of the technical terms employed in advertising work with which terms the accountant should be familiar.

Original Plate (often a zinc). This plate, known as a "pattern" plate, is made of especially prepared metal from which any number of electrotypes or matrices may be made. An electrotype may also be recast, but as it is once removed from the original plate, the printing will not be as distinct as from the original plate.

Matrix. A mold of a printing plate with the appearance of cardboard, made of asbestos and fiber. By placing the substance, resembling a blotter, on the face of the electrotype or original cut and then lowering a hydraulic steam press of several tons' pressure on the soft blotter material it is steamed and pressed in such a way that it dries and becomes quite brittle. Another method is to clamp the soft material on the face of the plate and beat it with a two-handled stiff bristled brush weighing about 8

AGENCY, New York

Business, *Art Novelties, etc.*

Dec.	*Jan.*	*Feb.*	*Mch.*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	
[A] *1 Pge*		[B] *1 Pge*		[C] *1 Pge*		[D] *1 Pge*		[E] *1 Pge*		[F] *1 Pge*		
[A] *¼ Pge*	[B] *¼ Pge*	[C] *¼ Pge*	[D] *¼ Pge*	[E] *¼ Pge*	[F] *¼ Pge*	[G] *¼ Pge*	[H] *¼ Pge*	[I] *¼ Pge*	[J] *¼ Pge*	[K] *¼ Pge*	[L]	

Monthly Publications

pounds until the impression of the cut has been made in the fibrous substance.

Stereotype. The cast obtained from a matrix by placing the matrix upon a flat steel plate with sides about 3/16ths of an inch high, which are closed in to fit the size of the matrix. A second flat steel plate is placed on the top and the steel sides referred to separate both surfaces about 3/16ths of an inch. Into this receptacle a composition of lead, zinc, and other substance is poured, and allowed to run over the face of the matrix. When the metal cools and hardens it assumes the same outlines as the matrix, and is known as the "stereotype." Many stereotypes may be made from a single matrix.

Screen. The examination of the surface of a newspaper or magazine illustration shows it to be covered with a number of small dots known as the "screen." Without these minute indentations, the fine details of an illustration would be smudged. In making plates, screens of different sizes are used; for instance, newspapers require relatively coarse screens—from 65 to 85 lines of dots to the inch for the best effect—whereas magazines which print on calendered or coated paper require 120 or 133 screen and often higher.

Wood Cut. Illustration carved on wood. This method produces the sharpest printing effect.

HALF-TONE. A plate, the printing from which resembles a photograph. The effect is produced by etching the plate that has received the photographic picture through a fine-ruled glass screen. The screen may have from 55 to 200 lines of dots to the inch.

KEY. The method of distinguishing the replies received from different advertisements, usually by a slight change in the address given in each case.

MEDIUM. Thereon or whereon the advertising copy appears.

COPY. An exact duplicate of the advertisement or advertisements to appear. Usually when the copy is changed for each insertion, the series of advertisements is put up in handy book form.

MORTISE. A space cut into the electro to permit the insertion of other matter.

PLATES. A general term covering cuts of all kinds.

RATE CARD. A card, sheet, or folder giving advertising rates, width and length of columns, etc.

READERS. An advertisement in regular reading form resembling news matter inserted in the news columns.

AGATE LINE. 1/14th of an inch and the accepted unit of measurement of advertising space.

EM. 1/6th of an inch and the unit of measurement of column widths. Newspaper columns are usually 13ems or 2 1/6 inches wide.

CLASSIFIED. Advertising set solid, no part being made dominant.

DISPLAY. Advertising which is illustrated or in which certain points are featured by larger type.

ELECTROTYPE. A copper-covered duplicate of type or illustrated matter, usually made with a wooden or metallic base, and used to print from in place of the original type form.

FLAT RATE. A fixed rate charged regardless of the amount of space used or the period of time of the order.

D. or E. D. Daily.

E. O. D. 3 insertions in one week (every other day).

2 T. A. W. Two times a week.

E. O. M. Every other month.

S. C. Single column in width.

D. C. Double column in width.

T. C. Triple column in width.

T. F. Until forbidden.

FULL POSITION. An advertisement inserted at the top of a column next to reading matter or an advertisement inserted following and next to reading matter.

Island Position. An advertisement entirely surrounded by reading matter, the choicest position in advertising.

N. R. M. Signifies that the advertisement is to appear next to reading matter.

R. O. P. Signifies that the advertisement may be placed in any part of the paper at the publisher's option, that is, have the "run of paper."

Position Requested. This signifies that R. O. P. rates have been used and that the advertising is to be accorded any position, which may be given at the paper's discretion. Position may be requested on the woman's page, sporting section, financial section, or other desirable location, but the publisher cannot be held liable if this location is not given.

CHAPTER XIV

HOTEL ACCOUNTING

By Roy B. Kester

Nature of Business

The business of a hotel is to room, feed, and administer to the varying wants of its guests. Unlike a mercantile concern, its stock-in-trade consists solely of food and supplies which at most will last only a couple of weeks. It derives its income from a number of sources, the most important of which are income from the rent of rooms; from meals served in the dining room, restaurant, or in any other public or private rooms; from the sale of mineral waters and cigars; from a barber shop, flower room, soda fountain, bootblack and newsstands; and from various other secondary lines under the direct management of the hotel; or from rents received from concessionaires, if the foregoing sales privileges are leased to outsiders—as is the more common practice. In the latter case the management is relieved of a great deal of worry connected with these minor operations and at the same time secures for guests the certainty of prompt and courteous service.

There is generally an agreement with these concessionaires, when they are not under the direct management of the hotel, whereby guests may receive credit and have purchases charged to their accounts on the hotel books. The hotel reimburses the concessionaire for all such purchases. The concessionaire, however, has some responsibility. He must make sure that the purchaser is in fact a guest at the hotel, for the hotel does not obligate itself to pay any accounts other than those of actual guests. He must take this risk, but beyond this point the hotel assumes all

responsibility. If for any reason the guest does not pay his account, the loss is borne by the hotel.

In the United States there are four types of hotels.

1. Those run on the American plan.
2. Those using the European plan.
3. Those combining both systems.
4. The so-called "apartment" hotel, where suites of rooms either furnished or unfurnished are rented for more or less extended occupancy, while a restaurant is maintained in the building for the convenience of guests.

Under the European plan, on which practically all foreign and many American hotels are run, the guest pays separately for room and for the meals ordered. Under the American plan the guest pays a certain amount a day for bath, room, and meals. When the hotel is run on the European plan and the guest orders a meal either he pays the waiter who must account to the cashier, or he signs his order, which is then charged to his account. If the guest is not rooming in the hotel, the waiter must have the head waiter's approval before permitting a meal to be charged. Under the American plan the hotel has no written evidence of the meals ordered, unless what is known as the "American plan check system" is used. This system is devised to do away with the danger of serving meals to those not entitled to them—a problem with which the hotel run on the American plan is confronted. According to this plan each guest writes out his order for meals, thereby eliminating many mistakes which occur when verbal orders are used and securing for the hotel many economies in the operation of the dining room. This check on the kinds of food ordered not only furnishes the hotel with accurate data of the number of guests served, but also with information as to the most popular dishes, thereby enabling the management to keep in close touch with the amount of supplies used and, last but not least, with the work of each individual waiter.

The big problem in hotel catering is to serve the guest with the best of food and still keep the per capita cost within reasonable limits. A cost system in the kitchen combined with comparative analytical reports of the profit on sales is the best solution of this problem. Any number of economies may be effected and numerous wastes eliminated, when detailed records of current consumption are kept for comparison with previous records.

Hotel Organization

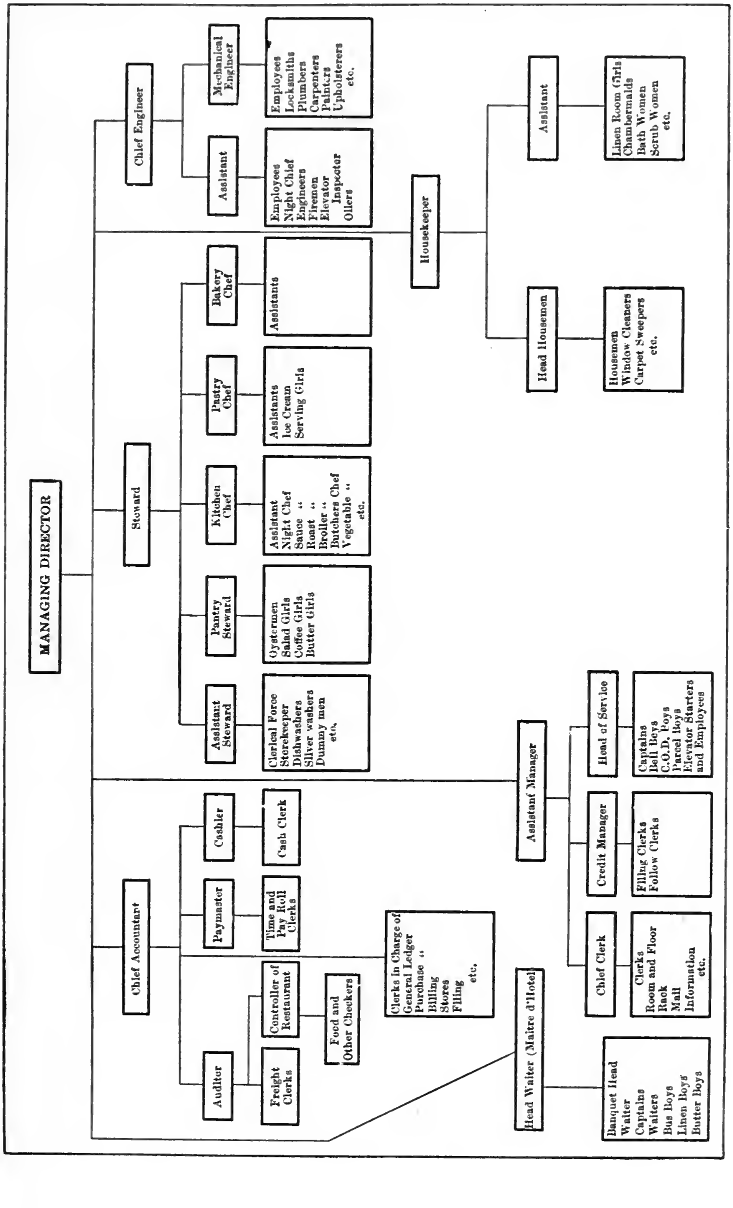
The management of a large hotel in a big city is usually in the hands of a general manager or managing director with as many assistant managers as the size of the organization may require. The title of "managing director" is commonly used in the hotel world today and is synonymous with that of the president of an industrial corporation.

The most responsible executives under the managing director are the:

Chief accountant
Steward
Head waiter (*maitre d' hotel*)
Chief engineer
Front office manager (assistant manager)
Housekeeper

These department heads are of equal authority within their own sphere. Other department heads whose duties are of minor importance are the persons in charge of the hotel valet, telephone, and laundry services, the head porter, printing, and Turkish or other baths departments, etc.

The study of the chart of the hotel personnel (Form 1) will make clear the responsibilities of the department heads and the duties carried on under their supervision. Though the chief department heads are answerable to the general manager, it is apparent that problems of management connected with minor



Form 1. Chart Showing Organization and Responsibilities of Hotel Employees

activities and services would not come to his attention but would probably be assigned to the care of an assistant manager.

Records and Books of Account

In a large hotel with its many departments and with the many and varied services which it renders to guests, the need of adequate records for administrative purposes is apparent. Moreover, owing to the constant coming and going of guests, the records must be absolutely accurate, complete, and immediately available. These requirements indicate the more striking peculiarities of hotel accounting.

It is not the purpose of this article to present a detailed system for hotel accounts but rather to point out the basic requirements on which have been built the many excellent systems in use today. The endeavor will be, first, to set forth the more important departmental records, their function and operation, and then to bring these together into the general books of account from which the condensed operating statements are made up.

The outstanding feature of the system of records is that it must be departmentized. Only so, can adequate control be secured. The chief sources of income to the hotel are: (1) rooms, (2) food, and (3) beverages and cigars. Minor sources are services, such as afforded by telephone, laundry, baths, barber, wash and bootblack, candy, news, flower, and other stands. As previously stated, these services may be performed by hotel employees or some or all of them may be leased to concessionaires, thus relieving the hotel management of their direct supervision. In some places an automobile garage and supplies store, stables, a golf course, etc., may be operated by the hotel. In others the rent of stores on hotel premises is an additional source of income. With what detail these various activities shall be handled in the accounts depends largely on their relative importance from the standpoint of administration. Only two of these departments will be discussed in any detail in this article, viz., rooms and food,

the fundamental procedures for the others following along the same general lines.

Accounting for Rooms

In accounting for the rooms used by guests, the following subsidiary records are fundamental:

Guest Register
Room Count Sheets or Book
Arrival Sheet
Departure Sheet

A brief explanation will make clear their use.

The first record of a room sale is made in the guest register when the guest arrives. As by law a hotel is compelled to keep the guest register, or a similar permanent record of all arrivals and departures in the front office, other records must be made from which the accounting department may charge the guests' accounts for rooms used. One of these records is the room count book (Form 2) on which the occupied rooms are listed and the total income from rooms for each day is ascertained. This sheet or book is made up from the "room rack," which is a visible card or rack slip record of the rooms in use, showing the number of the room, the name and address of the guest, the number of persons in the room, the date of arrival, and the rate (sales price). These cards are made up from the guest register and are removed from the rack upon a guest's departure.

Accounting for all rooms used and proving the accuracy and correctness of the work is very important. In this connection, at the end of the day a transcript is taken from the hotel register of the arrivals during the day, the number of the room occupied by the guest or guests, the charge for the room, and the total of all room charges for the day to be debited to the new guests' accounts. This constitutes the arrivals sheet. A similar transcript of departures is made, usually from the rack slips, on the departure sheet. Inaccuracies in the room count book often

occur because rack slips have been mislaid or lost. The method of proof of this record varies in different hotels. By one method, to the total of the preceding day's earnings, as shown in the room

ROOM COUNT BOOK

Date________

Room No.	Amount	Room No.	Amount	Room No.	Amount	Room No.	Amount
101		201		301		401	
102		202		302		402	
103		203		303		403	
104		204		304		404	
105		205		305		405	
196		296		396		496	
197		297		397		497	
198		298		398		498	
199		299		399		499	
200		300		400		500	

Form 2. Room Count Book

count book, is added the total on the arrivals sheet and from this total is deducted the total shown on the departures sheet; the resulting figure should equal the total of the day's earnings as shown in the room count book. In this way the accuracy of the entries in all three books is checked and the management has the surety that all occupied rooms have been charged to guests.

The correct figure for income from rooms having been established, it is carried to the earnings book, one of the most important of the general books, which will be explained later.

Accounting for Income from Food

The main subsidiary records used in accounting for restaurant income are the following:

Waiters' checks
Waiters' checks register
Restaurant cashier's report or book

The waiter's check is a sales slip and is the original record of income from sales of food. To control and keep track of the charges for meals, waiters' checks are consecutively numbered and the restaurant cashier enters in the waiters' check register the checks given to each waiter. As the checks are paid or signed, the waiter turns them over to the cashier together with the money received. The cashier enters them on a sheet ruled for the purpose of keeping track of the missing checks. The amounts of the checks may be either printed by a checking device in the kitchen or inserted by waiters. The cashier enters the receipts of cash and the amounts of the signed checks to be charged to guests on the restaurant cashier's report illustrated in Form 3. This consists of a sheet containing six columns—one each for the check numbers and total checks and two each for the charge and cash checks of the restaurant and mineral water trade. This report is sent to the chief accounting office daily, where the receipts shown thereon are entered in the earnings book.

RECEIPTS FROM DINING ROOM

Date_________

Check No.	Total	Restaurant		Mineral Water	
		Cash	Charges	Cash	Charges

Form 3. Restaurant Cashier's Report

Guests' Accounts

The guest knows a hotel usually only through the front office. The front office is the place where guests register, pay their bills, and obtain information—in other words the business and record-making section with which guests come in contact. The actual accounting, other than that connected with payments made by guests, is done in the accounting department of which the front office is merely a branch.

Except in the case of the local guest who uses only the restaurant or other facilities exclusive of rooms, or the patron of any of the hotel's services who pays on the spot for the service received, "room" and "guest" are practically synonymous for purposes of accounting, the problem of accounting organization being to make sure that all charges against the guest are gathered together in his room account.

Handling guests' (customers') accounts in hotel accounting differs somewhat from the practice in other lines. Charges for rooms and other services are posted to the front office ledger before an entry is made in an original entry book, such as a sales journal. It is apparent that a guest may depart at any moment and therefore his bill should be at all times ready for settlement, leaving the determination of accuracy in the majority of cases until after departure. The method of auditing and checking the charges to obtain proof of their accuracy will be described in a later section.

As soon as a guest arrives and registers, an account is opened with him to minimize the chances of a charge not being made. These accounts may be kept in a loose-leaf ledger, or better, on cards filed in a horizontal file, either alphabetically by guest name or consecutively by room number. The card system is preferable; it is less cumbersome to handle and more convenient in making charges to the accounts. On the guest card (Form 4) are entered the name and room number. Below are spaces for making charges for rooms, restaurant, telephone, laundry, cigars, porter, valet, C.O.D., and a sundry line for other charges. The form,

of course, differs depending upon the departments and services maintained. Below the various charges is a total line followed by two more lines—one for allowances and rebates and the other for cash paid by guests. The final line shows the balance forward. This card is provided with seven columns, each headed

Guest's Name____________
Room No.______ Rate per Day______ No.______
Balance Ford. from No.____
" " to No.____

Date	1		2		3		4		5		6		7	
Ford.														
Room														
Restaurant														
Telephone														
Laundry														
Cigars														
Porter														
Valet														
Sundry														
C.O.D.														
Total														
Rebates														
Cash														
Bal. Ford.														

Name__________________Room No.______

Form 4. Guests Ledger Card

by a date. The day's charges are listed in the proper column and line. Daily a total is taken and the balance unpaid is forwarded to the next day. A new card must be used every week. When transferring an account the number of the new account is entered on the account to be closed out and the number of the old account is entered on the new account in a space for the purpose.

This is to facilitate easy reference in case of dispute. All old accounts are filed in a rack according to the number found at the upper right-hand corner of the card.

The guest accounts are controlled by an account in the general ledger called "Guests" or "Transients." This is really nothing more than the usual Accounts Receivable control. To this account are posted the totals of all guests' charges, all receipts from guests, and any allowances or rebates given. In large city hotels the guest accounts are often divided into "guest" and "city" accounts, when charge accounts are opened for the convenience of city residents who use the hotel dining and entertainment facilities. When this division of the accounts is made the cards are segregated in the card ledger and each division has its own controlling account.

Another system of handling guests' accounts is shown in Form 5. Under this method all guests staying in the hotel are listed on one or more sheets, a new sheet is made out for each day, and balances are brought forward daily. While the use of these sheets is to be preferred to keeping the accounts in a bound ledger, the method is less flexible than the card system and is found in operation only in the smaller hotels.

Sources of Charges to Guest Accounts

The sources of the two main charges for rooms and food to guest accounts are the room count sheet previously described and the waiters' checks sent to the billing clerk as soon as entered by the restaurant cashier. The charges for laundry, baths, and any other hotel service not paid for in cash are sent to the front office on check voucher forms as soon as the charge is incurred so that the item may be promptly entered on the guest's account, thus insuring the completeness of the account when the guest asks for his bill. The checks give the room number, the number of the floor, and the amount of the individual charge. Cash expenditures for the account of the guest for railroad fare, theater tickets, and other items, are made usually by the front

GUESTS LEDGER

Date ______

Guest's Name	Room No.	Room	Rest-aurant	Tele-phone	Laundry	Cigars	Porter	Valet	Sundry	C.O.D.	Total	Rebates	Cash	Bal. Ford.

Form 5. Guests Ledger Sheet

office cashier and a cash charge slip covering same is passed immediately to the billing clerks.

Hotel Purchases

As the provisions, supplies, and other hotel purchases directly or indirectly reach the guest as a charge for meals or services, it is important to keep proper records for controlling the purchase expenditures. All orders, therefore, should be supported by a purchase requisition and should be approved by someone in authority. In every hotel there should be a receiving department for the registration, inspection, and count of all purchases when delivered to the hotel, after which they should be sent to the proper department for use or to the storeroom to be held until needed. The handling of food purchases will be discussed more in detail under food control accounting, pages 508–516.

Expense purchases are handled in much the same manner. All outside expenses incurred are supported by an order drawn by someone in authority, authorizing the creditor to perform certain services or deliver certain items, chargeable to expense. This same order requests a statement for such charges at the time the order is given. Expenditures of large amounts, say over $100, should have the approval of the manager. Those of smaller amounts the department heads have power to authorize.

The General Books

The general books kept by a hotel in addition to the general ledger consist of a:

General Journal
Cash Book
Earnings Book
Voucher Register
Pay-Roll Distribution Book

The customary subsidiary ledgers, viz., accounts receivable (front office), accounts receivable (city or local), and accounts

payable, are controlled by suitable accounts in the general ledger. The above are the main books or records from which postings are made to the general ledger. Numerous other reports and records, the more important of which have already been explained, work into the above books. The methods of collecting the figures for entry on the general books will now be described.

Verification of Earnings and Guests' Accounts

It has been seen that the daily income from rooms is recorded in and shown by the room count record, the verification of which has already been explained. The income from the restaurant is reported daily on the restaurant cashier's report. The controller's work of verification of restaurant sales is best done at night so that all auditing work is finished by the morning of the next business day. All of the other income-producing departments of the hotel make out reports of their day's business, separating the cash and charge sales, and send these to the accounting department. In some cases the charge sales on these departmental reports are made up by floors (i.e., charges are separated on the basis of rooms or guests on each floor). This secures a localization of error at the time of verification. The charge sections of these departmental reports must prove against the check vouchers sent to the bill clerks for charge to the guests' accounts. The cash sections must agree with the departmental cash receipts for the day.

The guests' accounts are then verified in order to make sure that all income shown as charged by the departmental reports has actually been charged to guests. The necessity for this daily verification of charges to guests' accounts in the hotel business is apparent. All of this verification work is usually done at night by night auditors, to whom are turned over the departmental reports, the guests' charge slips used as the basis of entry by the bill clerks, and the guests ledgers. To prove the charges to the guests' accounts, an analysis or abstract of the charges for the day to each account is made on a columnar form on which provi-

sion is made for the room number, the name of each hotel department from which charges come, a total column, and one for rebates, the analysis heads being the same as shown on the ledger card, Form 4. Each line thus represents one room. It is customary in the larger hotels to make this abstract by floors and recapitulate the floor sheet on a recapitulation sheet. If the departmental reports have been made by floors, any error is quickly located. If the income charged to guests as shown on the abstract of guests' accounts agrees with the income reported by the room count book and the various departmental reports, there is certainty that all income reported has been charged to guests.

The Earnings Book

The earnings book is the journal in which is entered for posting to the general ledger income accounts the summary of the various items of income after verification as explained above. Form 6 shows one form of ruling for this book. This is usually a loose-leaf book, one page being given to each month's transactions, only one line being needed for each day. Thus the earnings book segregates all classes of income and collects the total figures to be posted to the control accounts at the end of each month.

The " Hotel Sheet " System

Another system of ledger account keeping, less flexible than the one already described but requiring fewer records, is the method used in the houses of the Ritz-Carlton Hotel Company. A combination ledger and journal sheet, variously termed "daily hotel sheet" or "daily bill sheet" (Form 7), serves two different purposes. First, it is used as the means of collecting and showing all daily sales. Secondly, it functions also as an accounts receivable ledger. The sheet thus replaces the guest cards and the earnings book previously described. An examination of the sheet shows that the horizontal lines represent the

EARNINGS SHEET

Month of ____________

Date	Rooms		Restaurant		Telephone		Laundry		Cigars		Porter		Valet		Sundry		C.O.D.		Total	
	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge	Cash	Charge

Form 6. Earnings Book

sales accounts while the columns represent the guest accounts, that is, accounts receivable.

The operation of the sheet requires only brief explanation. At the bottom of the sheet the daily total is obtained by omitting in the addition any amount brought forward on the top of the sheet. The addition to this total of the amount brought forward gives the total to date, i.e., total debits to date due from the various guests.

The addition of the horizontal lines gives the various sales totals. These totals must prove each day with the sales records kept in the different departments. If there is a mistake somewhere its location is simple, since each department summarizes its own sales total.

The credit entries to the sheet are located at the bottom. After all credit entries have been made the difference between the sum of the credit entries and the total to date of each account is carried forward. This summarizes and closes the sheet for the day.

In starting the new sheet only the balances left in each guest account, as shown on the bottom of the old sheet, are carried forward. The sales accounts are posted to a monthly summary sheet corresponding with the earnings book and from there find their way into the control accounts on the general ledger.

From the above it can be seen that the sheet, as already stated, acts both as an accounts receivable ledger and a columnar sales journal and is the medium of summarizing daily all sales charges. At the end of the month the summary sheet shows the total debit to Accounts Receivable and total credits to the various sales accounts. The credits to guests' accounts as shown on the daily hotel sheets are summarized on the same monthly summary sheet. The credit summary, of course, must correspond with the total shown in the cash book, allowance book, and ledger transfer book.

Owing to the fact that all sales charges and credits have to prove daily with the different departmental reports of sales, it

will be seen that there is a close check on the work of the bill clerk. If it is once established that all sales charges, as well as credits for the day, are correct, the balances of the various accounts receivable must be correct also, unless the bill clerk has booked charges to the wrong account. The "brought forward" of each day gives, therefore, a correct trial balance of the guest accounts receivable.

Method of Handling Cash

The problem of handling and controlling cash in the hotel does not differ in the main from that in other businesses where there are numerous centers of cash receipts. The problem is complicated somewhat by the necessity of having several "shifts" of cashiers in some of the departments. This is particularly true of the front office cash, where a means of localizing responsibility for funds must be used, to protect both the incoming and outgoing cashier.

Each day the cash turned over to the general cashier by each of the departments is checked against the cash receipts shown in the front office cashier's report, the cash received from the restaurant and the cash derived from other sources of income. In the office of the general cashier is a cash book in which are entered the amounts of the cash received from the front office and the various departments. The cashier also deposits all cash in the bank daily and draws checks for all disbursements. As the details of the receipts are shown on departmental reports summarized in the earnings book and the details of expenditures are shown on the voucher register, the cash book is freed from a great deal of detail. This record is ruled on both debit and credit sides with four columns headed "Guest," "Local," "General," and "Total." Receipts from guests are entered in the guest columns on the debit side and expenditures on account of guests on the credit side. Cash items affecting local or city accounts are placed in a column of their own. The general columns are left for other cash transactions, such as receipts from interest,

	802 Mr. Maillard #1187 Rate $15		803 Mr. Allen #1171 Rate $30		804 See 803		805 Mr. Jones #1192 Rate $20		806	
Brought forward Sleepers	2	—	2	1						
Arrivals										
Departures							1	—		
Carried forward Sleepers										
Brought forward	950	—	1,540	—			450	—		
Apartments, including Baths, Light and Attendance	15	—	28	—						
Servants Room			2	—						
Breakfast	4	—	4	—			5	—		
Luncheon	9	—								
Dinner	14	—								
Tea										
Supper										
Breakfast Room										
Servants Board			2	50						
Sundries										
Cigars and Cigarettes										
Taxis										
Do										
Telephone (Trunk)										
Do (Local)										
Laundry										
Tailor and Pressing										
Sundries										
Restaurant Luncheon			8	—			6	—		
Dinner			16	—						
Supper										
Palm Court										
Grill Room and Open Air Restaurant Luncheons										
Teas										
Dinners										
Suppers										
Paid Out Telegrams and Cables										
Hairdresser										
Parcels and Bills										
Do										
Do										
Cash										
Postage										
Autos and Cabs			5	—						
Newspapers										
Theater Tickets										
Messengers										
Expressage										
Do (Excess Weight)										
Railroad Tickets							15	—		
Daily Total	42	—	65	50			26	—		
Total to Date	992	—	1,605	50			476	—		
Less Cash Paid *Cr.*			1,000	—			476	—		
Allowances										
Accounts Transferred to Ledger										
Carried forward	992	—	605	50						
Ledger Folio										

Form 7. Daily

807 Mrs. Smith, Maid #1198 Rate $20		808		809		810 Mr. & Mrs. McArthur #1205 Rate $25		Date ________ 192	TOTAL	
									4	1
1	1					2	—		3	1
									1	—
								Brought forward	2,940	
22	—					25	—	Apartments, including Baths, Light and Attendance	90	—
3	—							Servants Room	5	—
								Breakfast	13	—
								Luncheon	9	—
						16	—	Dinner	30	—
								Tea		
								Supper		
								Breakfast Room		
2	50							Servants Board	5	—
								Sundries		
								Cigars and Cigarettes		
2	—					3	—	Taxis	5	—
								Do		
								Telephone (Trunk)		
								Do (Local)		
								Laundry		
								Tailor and Pressing		
								Sundries		
9	—							Restaurant Luncheon	23	—
11	—							Dinner	27	—
								Supper		
								Palm Court		
								Grill Room and Open Air Restaurant Luncheons		
								Teas		
								Dinners		
								Suppers		
								Paid Out Telegrams and Cables		
								Hairdresser		
								Parcels and Bills		
								Do		
								Do		
								Cash		
								Postage		
								Autos and Cabs	5	—
								Newspapers		
						12	—	Theater Tickets	12	—
								Messengers		
								Expressage		
								Do (Excess Weight)		
								Railroad Tickets	15	—
49	50					56	—	Daily Total	239	—
49	50					56	—	Total to Date	3,179	—
								Less Cash Paid *Cr.*	1,476	—
								Allowances		
								Accounts Transferred to Ledger		
49	50					56	—	*Carried forward*	1,703	—
								Ledger Folio		

Hotel Sheet

dividends, rentals, etc., and expenditures on account of the pay-roll, accounts payable, etc. The total column is used only to prove its mathematical accuracy. The cash book is footed monthly when the totals of the various columns are posted to their respective control accounts.

Recording Expenditures

In the general books expenditures are recorded in a vouchers payable register, with columns for the proper segregation of detail. Every transaction is finally reflected as a debit to some stock or other asset account or an expense account and a credit to the Vouchers Payable account. In the stores ledger such items are posted to appropriate stock accounts, which form a perpetual inventory but do not enter into the general records. This matter will be taken up in more detail when the cost system in the kitchen is discussed, where also the distribution of the pay-roll will be briefly explained.

Cost System Stores Inventory

Every hotel should have some record of the cost of operating the kitchen and dining room. Unless control is exercised over this branch of the business, waste and inefficiency are bound to be present. A cost system for the kitchen need not be complex to furnish the management with valuable information.

The cost system begins with the receipt of provisions and supplies. After the purchases have passed through the receiving room, where record is made of their receipt, they should be classified as either "direct" or "stores." The direct purchases comprise such perishables as meats, fish, vegetables, milk, butter, oysters, etc.,—articles which are delivered direct to the kitchen, pantries, bake shop, or pastry shop to be placed in refrigerators; the "stores" include the canned goods, groceries, and supplies taken into stores and are issued only on requisition. These latter purchases, after counting and checking, are delivered with a receiving report or record to the storesroom where the proper

records of their receipt are made out on suitable stores ledger cards. A receiving record shows the date the goods are received, the concern from whom received, and the number of packages, boxes, barrels, or other units. Since it is usually impracticable to check or inspect all the goods upon receipt, this record should be later supplemented by a report of material received, which is prepared when goods are opened up and inspected, after which it is sent to the accounting office where it is checked against the creditor's invoice.

The departments to which perishables are delivered are, for purposes of food control, regarded as the producing departments. The divisions are based on the fact that the items on the menu can be classified under the heads of "kitchen," "pantries," "pastry shop," or "bake shop"; also each of these four producing departments has its own chef who can be held responsible not only for the quality of his productions but also for the economical operation of his department.

A well-operated hotel kitchen does not store perishable supplies in greater quantity than one or two days' consumption, provided the market for the supplies is within easy reach. Of staple goods, groceries, canned fruits, and vegetables, etc., hotels make larger purchases than their immediate need, as at times they obtain favorable quotations on greater quantities. It is obvious that if the hotel is ably managed, the direct purchases delivered and charged to the producing departments, plus the value of the issues from the stores, would constitute the cost of sales of those departments. The perishable inventories in the producing departments should be kept as low as possible, and the direct purchases and the issues from the stores should be based on the anticipated business of the day. When once it is conceded that the inventories of the producing departments can be kept low, there already exists the beginning of the close control of kitchen costs.

The advantages and operation of a perpetual inventory wherever applicable are too well known to need description.

Particularly is such a record valuable to a hotel, where large wastes and losses occur unless there is a rigid check on consumption. A physical inventory should be taken at least once a month and oftener if serious discrepancies are found when the items are checked. The perpetual inventory will greatly simplify this task and furnish a means of detecting leaks by showing in what articles discrepancies appear. Receipts of goods are debited in the usual manner to the inventory records, i.e., the stores ledger cards, and issues are credited from requisitions, the difference being the balance on hand. This balance should agree with a physical inventory.

Cost is the basis of pricing the requisitions and also the inventory. Fluctuations in market price should be ignored, for the goods cost the hotel a certain figure and this figure is the only correct one to use in figuring cost. If the hotel buys one lot of sugar at 10 cents a pound and later another at 8 cents, the sugar bought at 10 cents is first consumed and charged at that price and then the 8 cents price is used.

The Food Control System

It should be clearly understood at the beginning of this discussion that the food control system, so far as concerns the consumption of the various items of provisions, does not enter into the general books of the hotel at all.

The system of control consists of a daily analysis of restaurant costs and sales. The costs, as already explained, are determined from the direct purchases and the issues of stores charged to the producing departments. The analysis of costs and sales is made upon a comparative analysis sheet showing the items of the menu classified under their proper departments. Thus the cost of the soups, fish, meats, poultry, eggs, vegetables, etc., delivered to the kitchen department are compared with the sales of these dishes abstracted from the waiters' checks. Similarly the costs of the pantries department, which handles oysters and clams, green salads, fruits, cheese, milk, tea, coffee, etc., and of the pastry

Comparative Summary of Departmental Operations for Months December and November, 19–

	Total	Kitchen	Pantries	Pastry Shop	Bake Shop	Table Butter	Store Differ.	By Prod.	Diff. in Sales	Helps Food
December, 19—										
Sales	$66,132.46	$41,300.80	$14,879.54	$6,275.12	$1,837.50	$1,839.50				
Cost	24,153.20	15,767.13	3,450.39	2,373.08	743.05	729.40	$370.29	*$62.90*		$782.76
Gross profits	41,979.26	25,533.67	11,429.15	3,902.04	1,094.45	1,110.10	*370.29*	62.90		*782.76*
% of gross profit on cost	173.81%	161.94%	331.24%	164.43%	147.29%	152.19%				
% of gross profit on sales	63.48%	61.82%	76.81%	62.18%	59.56%	60.35%				
Cost of each dollar sale	36.52¢	38.18¢	23.19¢	37.82¢	40.44¢	39.65¢				
November, 19—										
Sales	$60,867.11	$37,375.35	$14,485.85	$5,496.95	$1,643.85	$1,643.85			$221.26	
Cost	25,291.35	16,233.41	3,670.22	2,490.87	611.55	887.60	539.91	*50.60*		908.39
Gross profit	35,575.76	21,141.94	10,815.63	3,006.08	1,032.30	756.25	*539.91*	50.60	221.26	*908.39*
% of gross profit on cost	140.66%	130.24%	294.69%	120.68%	168.80%	85.20%				
% of gross profit on sales	58.12%	56.57%	74.67%	54.69%	62.80%	46.01%				
Cost of each dollar sale	41.88¢	43.43¢	25.33¢	45.31¢	37.20¢	53.99¢				
Increase and *Decrease*										
Sales	$ 5,265.35	$ 3,925.45	$ 393.69	$ 778.17	$ 193.65	$ 195.65			*221.26*	
Cost	*1,138.15*	*466.28*	*219.83*	*117.79*	131.50	*158.20*	*169.62*	*12.30*		*125.63*
Gross profits	6,403.50	4,391.73	613.52	895.96	62.15	353.85	169.62	12.30	*221.26*	125.63
% of gross profit on cost	33.15%	31.70%	36.55%	43.75%	*21.51%*	66.99%				
% of gross profit on sales	5.36%	5.25%	2.14%	7.49%	*3.24%*	14.34%				
Cost of each dollar sale	*5.36¢*	*5.25¢*	*2.14¢*	*7.49¢*	3.24¢	*14.34¢*				

department, which handles ice cream, pies, and pastry, are compared with the sales of the items on the menu. On the food control analysis sheet are shown the per cent of gross profit on cost and on sales, the cost of each dollar sale, the total costs and sales, and the total gross profit of the department; and the current figures are compared with the average figures or those of preceding months. In the determination of gross profit only the cost of provisions and supplies—not labor—is considered.

The comparisons shown on such an analysis sheet are invaluable as a guide to the economical and profitable operation of the hotel restaurant; for not only are the sources of the greatest profit indicated, but the report also shows the steward which items are the most popular. At the end of the month the daily analysis sheets are summarized and a report is drawn up showing the cost of sales and the profit earned by each department for the current and past month, as illustrated in the accompanying summary. Such a report is of particular interest to the heads of each department, as any waste or extravagance in the use of provisions and supplies will be reflected in the percentage figures; on the other hand the economical use of ingredients allied with the skill to concoct dishes in delectable ways will favorably affect the profit figures and produce a better showing.

The operation of a high-class restaurant involves so heavy an expenditure in rent, light, equipment, salaries of chefs, service, etc., that every dish should produce a gross profit sufficient to cover this overhead and as much more as the nature of the dish and efficient management permit. Since the era of prohibition, restaurant managers have been compelled to pay more attention to economy in operation, because formerly any net loss on the sale of food was often recouped by the large profits made on the sale of intoxicating beverages.

Compilation of Restaurant Costs on the General Books

The general books of account show the restaurant costs and sales as a whole and the profit thereon and no attempt is made to

record the detail shown on the analysis sheets. The segregation of purchases on the books into fish, meats, eggs, etc., would not give any accounting information of value unless the sales of the same items were also segregated. To burden the books with such details would require more clerical work than the results obtained would warrant. Accordingly the bookkeeping needs are met by allotting two columns in the voucher register to provisions—one for direct and the other for stores—and by opening two corresponding ledger accounts. Direct Provisions account is charged with the cost of all perishables and credited with the deliveries to the producing departments; Stores Provisions is charged with the cost of the food items that can be stored without refrigeration and is credited with the deliveries to the producing departments, thus serving as a controlling account showing the value of the provisions on hand for future issue. The credits to these accounts are compiled in a book in which the deliveries and issues to the departments of kitchen, pantries, etc., are shown.

The total credits to the two above accounts are charged to an account called "Cost of Food Sales," which shows on its credit side the income received from sales, the balance of which represents the gross profit on food sales. This balance is closed out to an account called "Cost of Operating Restaurant," which collects on its debit side all the costs of operation, such as wages, cleaning, music, light and heat, laundry, silver, chinaware, and so on. The balance of this account is transferred to Profit and Loss.

Labor and Overhead Costs

The other two costs in connection with operating a hotel are labor and overhead. The distribution of labor cost is effected on the pay-roll, which is like any other pay-roll. Each department keeps the time of its employees, and the time of each worker is distributed to the department in which employed. When the books are closed and results by departments are made up, the Pay-Roll account is credited for the total amount and the various departments are debited.

Overhead includes the usual items of rent or occupation cost, insurance, taxes, light, heat, power, depreciation, repairs, supplies, and any other indirect expenses incident to the operation of a hotel. Officers' salaries, insurance, license fees, legal expenses, accounting expense, and other charges that apply to the system as a whole and cannot be charged to departments are properly included under General and Unapportioned expenses in a final section of the profit and loss statement.

The general ledger contains an account with each of these expenses and the more common items have a special column in the voucher register. Charges to these accounts originate and are posted in the usual manner.

All overhead expenses should first be distributed to departments, regardless of whether or not they produce any income. Some equitable basis must be used and this basis varies with different items of overhead. Rent can best be distributed on the basis of floor space occupied, taking into consideration the desirability of the location, insurance on the basis of the value of the property insured, light and electric power on readings of meters in departments; while repairs, supplies, and depreciation must be distributed on either the actual or an estimated cost of such charges to each department. After all overhead has been distributed the cost of the unproductive departments can be prorated over the income-producing departments.

After providing for all accrued expenses and deferred charges, the expense accounts are closed to the operating departmental accounts so that the only open accounts are those showing the inventory of stores on hand, accrued and prepaid expenses, and the profit or loss from each department.

It is apparent that for all the departments except the restaurant, no provisions enter into their cost.

Board of Employees

When making up operating results by departments, a very important item of cost which should always be considered is the

cost of employees' meals. It is sometimes, if not usually, arranged by employees of the hotel that they are to receive their meals or rooms and meals in lieu of wages. In this case such cost is really a part of the salary or wages paid and is a proper charge against the operating cost of the department in which such persons work and a credit to the cost of food charged to the restaurant. The standard form of contract between hotel and employee states that meals of a certain quality and number are to be considered as part of the employee's wages. What is the cost of employees' meals is in some cases determined with great accuracy and in others an estimated amount is used. In large establishments, where officers' and help's food can be definitely segregated through the use of separate kitchens and dining rooms, a very close determination of costs is possible. The total cost divided by the number of meals served gives the cost per meal. An analysis of meals served on the basis of the different departments in which the employees are engaged gives the basis for prorating meal costs over the various departments. Where the officers use the regular restaurant, waiters' checks with the food sales values as shown by the menu provide the basis for figuring costs. The method used is somewhat as follows for any given month. Assume the following data:

Restaurant sales	$55,269.25
Officers' meals (sales valuation)	3,241.30
Cost of food	21,237.40

The segregation of costs is made as follows:

Total sales ($55,269.25 + $3,241.30)	$58,510.55
Ratio of officers' to total ($3,241.30 ÷ $58,510.55 = .0554)	.0554
Cost of officers' food ($21,237.40 × .0554 = $1,176.55)	$ 1,176.55

When showing the gross profit on the restaurant, cost of employees' meals should first be deducted from the cost of food used. The credit here becomes a charge distributed as a cost of operating the various departments of the hotel.

By-Product Sales and Difference in Stores

Sales of unusable or surplus by-products from the kitchen, such as sales of grease, should be treated as credits to Cost of Foods, inasmuch as their original cost was charged to food costs.

Similarly, the difference in stores should be used as an adjustment of food costs. When the monthly inventory of stores provisions is taken and the amount of the under- or over-valuation of stores requisitioned is thus determined, the cost of foods used must be adjusted to accord with the figure of actual costs as shown by the physical inventory.

Miscellaneous Accounts

Practically the only accounts found in a hotel other than those already explained are income from concessionaïres, and the general and unapportioned expense accounts. The former is nothing more than rent income and the latter are the usual expenses found under this caption and handled in the same way.

Adjustment and Other Entries

The adjustment of the accounts prior to closing is the same as in all businesses and comprises the accruing and deferring of expenses, the taking of inventories—as a check on the perpetual inventory—the balancing of accounts and the booking of depreciation. These entries present no special problem and require little comment. In the hotel business the provision for bad debts perhaps reaches its lowest limits. The accounts receivable do not run into large figures and credit is extended only after an examination of a guest's credit rating. Further, to assist the hotel in the collection of charges the law gives the hotel a lien on a guest's personal property, thus making losses from bad debts small indeed.

As regards depreciation the reverse holds true. Most of the equipment of a hotel is in constant use and consequently the loss from wear and tear is heavy. On silverware, chinaware, and linens the depreciation charge varies from 15% to 50% per

annum. In some hotels all purchases of renewal equipment are considered as additions to the fixed assets and a heavy depreciation is charged off annually. In other hotels purchases of equipment are considered as the amount by which such items depreciated during the period. If strictly adhered to, the two policies would have the same net effect, but it must be admitted that if, in the latter case, purchases of renewals are inadequate and the equipment is allowed to run down the profits are thereby overstated. Similarly, if renewals are so generous in amount as to constitute betterments, an understatement of profits will occur and a secret reserve will be built up. For this reason the former method is to be preferred.

Method of Closing the Books

The method of closing the books to show the results of operation is only slightly different from the usual procedure. After the summarization of all books of original entry and posting to the general ledger and after the ledger has been adjusted as explained above, the process of clearing the various departmental accounts and showing the net profit follow, in the main, those of other businesses where a showing of departmental results is attempted.

In a manner similar to the way previously described for the restaurant, the costs and the income of other income-producing departments are summarized, in a Cost of Rooming, Cost of Mineral Waters, Cost of Valet Service, Cost of Operating Laundry, Cost of Cigar Sales, and sundry other departmental accounts. The balances of these accounts are closed into a general Profit and Loss account, in which the general administrative expenses appear as a deduction from profits. The balance of the general Profit and Loss account represents the net profit from the income-producing departments of the hotel. If rent is received for concessions, this item is also closed into Profit and Loss, as are income from investments, interest received, and cash discounts obtained. Interest cost and allowances, as deductions from profit, are also closed into this account. The balance of the

Profit and Loss account now shows the final net profit for the period. These adjusting and closing entries are made, of course, through the general journal.

Statements

The form and content of a hotel balance sheet do not contain distinctive items sufficient to require illustration. A typical profit and loss statement and schedules are appended to indicate how operating results are shown.

In reading and studying the statement and supporting schedules, the principles discussed in the preceding pages should be kept in mind. The departmental costs subtracted from departmental income give the gross profit by departments. This use of the term "gross profit" must not be confused with its use in connection with detailed restaurant costs, where the difference between the income from food sales items and the direct cost of the food entering into those items is called "gross profit."

In the schedules are shown the distribution of the departmental pay-rolls, the expenses and supplies directly chargeable to the various departments, the board of the employees of each department, and the distribution of the overhead expenses. In the case of the restaurant (Schedule 2), food costs comprise an important item. Physical inventories are used here. As a memorandum for comparative purposes, following "Cost of Food Consumed" are shown the period's requisitions and the difference between the book and physical inventories. The board of all hotel employees—and by-product sales—is deducted from "Cost of Food Consumed" to give the cost of food used in meals served guests. Where possible, food sales and costs should be summarized as shown on page 511 and this summary be made a part of the regular reports for the period.

The method of handling a non-income-producing department is shown in the case of the laundry department (Schedule 6), where are brought together all the costs of operating it and these are shown distributed to the proper income-producing departments.

Hotel Sunset

Statement of Profit and Loss for year ending December 31, 19–

	Rooms	Restaurant	Mineral Water	Cigars	Valet	Total
Operating Income	$227,713.00	$179,012.00	$14,475.00	$ 5,450.00	$ 4,080.00	$430,730.00
Operating Costs (See Schedules 1–5)	161,607.00	146,628.00	10,730.00	4,100.00	2,225.00	325,290.00
Gross Profit from Operations	$ 66,106.00	$ 32,384.00	$ 3,745.00	$ 1,350.00	$ 1,855.00	$105,440.00
Other Operating Income:						
Rent from Barber Shop					$ 900.00	
" " Coat and Check Room					750.00	
" " Flower Room					600.00	
" " Newsstand					450.00	2,700.00
Net Operating Income						$108,140.00
General Administrative Expenses:						
Officers' Salaries				$12,000.00		
Office Salaries				6,000.00		
Board of Office Force				3,800.00		
Stationery and Printing				440.00		
Advertising				3,500.00		
Legal Expense				1,000.00		
Taxes and Licenses				7,000.00		
General Expenses				3,000.00		
Depreciation				3,450.00		
Insurance				750.00	$40,940.00	
Financial Management Expense and Income:						
Expense:						
Discounts Allowed Guests			$ 43.00			
Bad Debts			345.00			
Cash Short and Over			8.00			
Interest on Notes Payable			600.00	$ 996.00		
Less:						
Income:						
Purchase Discount			$ 1,361.00			
Interest on Bank Balance			350.00			
Interest on Liberty Bonds			450.00			
Income from Investments			500.00	2,661.00		
Excess of Income					*1,665.00*	39,275.00
Net Profit for Year						$ 68,865.00

Schedule 1

Cost of Operating Rooms

Pay-roll (front office, service, and housekeeping)	$ 85,077.00
Board of employees	32,200.00
Fuel	8,500.00
Light	9,500.00
Laundry (Schedule 6)	2,500.00
Telephone rental and operators	10,000.00
Repairs and maintenance	450.00
Depreciation furniture and fixtures	2,780.00
Water, rent, and permits	4,500.00
Supplies	3,600.00
Stationery and gratuities to guests	2,500.00
	$161,607.00

Schedule 2

Cost of Operating Restaurant

	Direct Provisions	Stores Provisions	Total
Cost of Food:			
Inventory, January 1, 19—	$ 1,750.00	$ 3,500.00	$ 5,250.00
Purchases	94,078.00	36,667.00	130,745.00
In freight and express	1,410.00	470.00	1,880.00
	$97,238.00	$40,637.00	$137,875.00
Less: Inventory, December 31, 19—	1,450.00	2,900.00	4,350.00
Cost of Food Consumed	$95,788.00	$37,737.00	$133,525.00
Requisitions		$37,327.00	
Stores shortage		410.00	
		$37,737.00	
Less:			
Sale of scraps and empties		$ 3,960.00	
Board of employees and office force		47,025.00	50,985.00
Total cost of food consumed in serving meals to guests			$ 82,540.00

SCHEDULE 2—(*Continued*)

COST OF OPERATING RESTAURANT

	Direct Provisions	Stores Provisions	Total
Pay-roll (dining room, kitchen, etc.)		$24,938.00	
Salary storekeeper		2,400.00	
Board of employees		10,525.00	
Light		1,300.00	
Heat		7,500.00	
Supplies		500.00	
Laundry (Schedule 6)		1,500.00	
Breakage of china		7,925.00	
Depreciation of:			
Linen	$ 2,500.00		
Silverware	1,000.00		
Equipment	1,000.00	4,500.00	
Music		3,000.00	64,088.00
Cost of operating restaurant			$146,628.00

SCHEDULE 3

COST OF OPERATING MINERAL WATER DEPARTMENT

Cost mineral waters, etc	$ 7,200.00
Pay-roll	2,100.00
Board of employees	600.00
Light and heat	500.00
Depreciation of equipment	120.00
Breakages and repairs	210.00
Total	$10,730.00

SCHEDULE 4

COST OF OPERATING CIGAR DEPARTMENT

Cost of cigars	$ 2,100.00
Pay-roll	1,500.00
Board of employees	300.00
Light and heat	100.00
Sundry overhead	100.00
Total	$ 4,100.00

Schedule 5
Cost of Valet Department

Pay-roll	$ 1,250.00
Board of employees	250.00
Uniforms	475.00
Supplies	250.00
Total	$ 2,225.00

Schedule 6
Cost of Operating Laundry

Pay-roll	$ 1,750.00
Board of employees	350.00
Water	385.00
Light, heat, and power	505.00
Supplies and cleaners	300.00
Depreciation of equipment	710.00
Total	$ 4,000.00

Distribution

To Cost of Operating Rooms (Schedule 1)	$ 2,500.00
To Cost of Operating Restaurant (Schedule 2)	1,500.00
	$ 4,000.00

CHAPTER XV

MUNICIPAL ACCOUNTING

By James L. Dohr

I. The Municipal Corporation

Definition

Municipal accounting or, as it is sometimes called, "public" or "governmental" accounting, is that branch of accounting which has to do with the accounts of states and public corporations, including counties, cities, villages, towns, school districts, road districts, levee districts, drainage districts, irrigation districts, and publicly owned charitable and penal institutions. Its general principles are the same as those of commercial accounting but owing to the peculiar nature of public corporations, their organization, their functions, and their methods of finance, certain fundamental differences in accounting procedure exist which must be carefully considered in order to appreciate properly the theory and practice of municipal accounting.

The Nature of Public Corporations

The nature of the public corporation may be shown best by the following comparison of its purposes, organization, functions, and methods of finance with those of the private corporation.

Public Corporation	*Private Corporation*
1. Created and powers defined by charter from the state.	1. Created and powers defined by charter from the state.
2. Owned by its citizens.	2. Owned by its stockholders.
3. Governed by legislative body elected by its citizens.	3. Governed by board of directors elected by its stockholders.
4. Administering officials, elected or appointed by governing body:	4. Administering officials, elected or appointed by its board of directors:

(a) Mayor, chief executive officer.
(b) Clerk.
(c) Treasurer.
(d) Auditor in charge of accounts.

5. Department heads:
   (a) Police.
   (b) Fire.
   (c) Health.
   (d) Highways.
   (e) Charity.
   (f) Education.
   (g) Inspection.
6. Foremen and employees.
7. Operations consist of purchase and storage of materials, employment of labor in various capacities, receipt and disbursement of monies, etc.

(a) President, chief executive officer.
(b) Secretary.
(c) Treasurer.
(d) Auditor in charge of accounts.

5. Department heads:
   (a) Sales.
   (b) Credits.
   (c) Production.
   (d) Traffic.
   (e) Purchases.
6. Foremen, sales agents, employees, etc.
7. Operations consist of purchase and storage of materials, employment of labor in manufacturing and in rendering services, sale of product, receipt and disbursement of monies, etc.

Purpose of Organization

The purposes for which public corporations exist lie back of the most important peculiarities in their accounts. Fundamentally the private corporation exists for the purpose of profit; it endeavors to sell its services or product at cost plus profit so that it may pay dividends to its stockholders, who have voluntarily contributed capital to the enterprise in anticipation of such dividends. The public corporation on the other hand exists to render certain services at cost to the beneficiaries, who are involuntarily liable for such cost through residence, transaction of business, or property ownership. While this difference is not always present (private corporations are not always organized for profit and the public corporation may operate profit-making enterprises) it is responsible for the principal peculiarity of municipal accounts. Thus the Income account must show:

For the Public Corporation

1. Expenditures made in rendering services.
2. Revenues raised to meet same as to:
   (a) Adequacy.
   (b) Propriety.
   (c) Equity of apportionment between beneficiaries.
3. Excess of revenues or expenditures.

For the Private Corporation

1. Amounts realized from sale of product or services:
   (a) Cost of product or services.
   (b) Profits or losses on sale.
   (c) Disposition of profits.

Thus, while the Income account of the private corporation is concerned with profits on sales and their disposition, the Income account of the public corporation must show expenditures and the adequacy of the revenues raised to meet them.

Organization

The table submitted on page 523 indicates that we may expect to find a distinct similarity in the organization structure of public and private corporations. In so far as the accounts are affected by this structure we may expect to find few differences. There is, however, one peculiarity in the organization of the public corporation which brings up important accounting problems, i.e., the decentralization in municipal organization due to political conditions. The public corporations of this country are controlled largely by the political parties and in the effort to remove certain municipal functions from the "realm of politics" many independent boards and commissions have been created to control those functions. Thus, in a small city we may find the following administrative bodies:

1. Common Council, exercising general control except as noted below. Records kept by city auditor.
2. School Board, exercising control over municipal education except as noted below. Records kept by board secretary.
3. Board of Industrial Education, exercising supervision over industrial education. Records kept by board secretary.

4. Library Board, exercising partial control over library affairs. Records kept by librarian as secretary of the board.
5. Board of Public Works, exercising control over construction of streets, sewers, curbs, water mains, and laterals. Records kept by city auditor.
6. Board of Water Commissioners, exercising control over the operation of the municipal water department. Records kept by board secretary.

It will be noted above that several of the boards mentioned have each a secretary who keeps the records covering the various activities of the particular department administered by the board.

This decentralization in municipal organization is of interest to the accountant since it involves a consolidation of balance sheets and income accounts in order to present complete statements covering the finances of the municipal corporation as a whole. As between themselves the various departments which keep their own records must be considered as distinct entities with interdepartmental accounts receivable and payable.

This condition in municipal corporations, together with certain other causes, has led to a movement for greater efficiency in municipal administration through the adoption of a "city commission" or "city manager" form of government, under which administration and control are centralized. In so far as this centralization is accompanied by a centralization of the recording functions it cannot help but improve the character of municipal accounting.

In connection with the subject of municipal organization it should be noted that the division of jurisdiction between the public corporations may overlap, as shown by the following example of the intercorporate relationships existing in a typical state:

The state divided into

- Counties each of which is divided in two ways
  1. Towns, Villages, Cities which may include
     - Sewer districts
     - Highway districts
     - or other units

     and may or may not include
     - Road
     - Drainage or
     - Irrigation
     - districts
  2. School districts

Thus, a citizen of the state is always, depending upon his residence, a member of:

1. The state
2. A county
3. A town, city, or village
4. A school district

He is often also a member of a sewer, road, or other district.

This intercorporate relationship has an important bearing on uniform municipal accounting. It is desirable for all cities, for example, to keep their accounts on a uniform basis so as to permit comparisons and a consolidation of their accounts, so as to show total costs of government, total revenues, total assets, etc., in a given state. Such a consolidation has been made of municipal revenues and expenditures in the state of Wisconsin where all municipalities submit uniform reports to the State Tax Commission. Similar work is done in Massachusetts by the State Bureau of Statistics.

A further point of interest in the intercorporate relationship lies in transactions between municipal corporations. Thus, while all may have certain tax-levying powers the assessment and collection of the tax may be handled by one corporation. After collection, appropriate amounts are transferred to the other corporations, the transfers being called "agency transactions."

Purposes and Functions

The functions of the public corporation give rise to few peculiarities in the accounts other than those of terminology. In many cases the municipality performs services which might equally well be and in fact often are rendered by private corporations. Thus in one city the water-works may be privately owned, while in another it may be operated by the municipality. We may find in some cities that privately operated street car lines compete with those municipally owned. In general, however, we may outline the functions of the municipality as follows:

1. Protection of the person and property of its members by the maintenance of police, fire, and inspection departments.
2. Care of the public health and sanitation.
3. Care of its members who are unable to care for themselves (charity).
4. Construction, operation, and repair of streets, surface drainage, sewers, curbs, crosswalks, etc.
5. Education of its members.
6. Promotion of recreation of its members.
7. Operation of public service enterprises, such as water, gas, or electric plants, quarries, street railways, cemeteries, etc.

Municipal Finance

Municipalities derive their funds from the following sources:

1. Taxation or a levy of a uniform rate upon all beneficiaries on the basis of property ownership or income.
2. Miscellaneous charges at a nominal fee or cost for licenses issued, permits granted, or services rendered.
3. Special assessment or levy against beneficiaries for services rendered at cost, such as the construction of roads, sewers, etc., (for outlays) or other services (for expenses).
4. Utility revenue or charges at cost plus profit for services rendered by municipally owned public utilities.
5. Borrowing on serial or sinking fund bonds or short-term loans (temporary loans).
6. Income from trust and sinking funds.

The plan of finance used by the municipality is known as the "budget" system, the budget being defined as an instrument of financial control. For the most part the budget systems in use are crude and inefficient, consisting mainly in a few lump sum appropriations (authorizations to incur obligation) made by the

budget officials on the basis of their estimates of requirements Scientific budget procedure involves the following:

1. Preparation by department heads of detailed estimates of requirements for their departments in the approaching fiscal period.
2. Compilation and editing of such estimates by the auditing department.
3. Submission of the revised estimates to a committee on finance by the auditing department, together with comparative data on prior fiscal periods and estimates of revenues available and required to meet needs.
4. Hearings by the committee on finance, at which department heads, auditing department, or citizens may urge changes.
5. Revision of estimates by finance committee and submission to governing body with recommendation of adoption.
6. Hearings by governing body similar to hearings before committee on finance.
7. Revision by governing body and adoption of budget as official plan of finance by:
    (a) Making appropriations covering each expenditure.
    (b) Levying necessary taxes and authorizing necessary loans.
8. Control of the budget by appropriate official so that no expenditure may be made except as authorized by appropriations.
9. Accounting for the budget by keeping record of each appropriation and obligation named thereunder, and by a final report on the execution of the budget.

The budget is made up of the following estimates:

1. An estimate of financial condition at the beginning of the fiscal period.
2. Estimated revenues during the fiscal period.

3. Appropriations for expenditures during the period.
4. An estimate of the financial condition at the end of the fiscal period.

Legal and Economic Restrictions

The financial methods of municipalities are subject to certain legal and economic restrictions, the non-observance of which leads to unsound and inequitable practices. The restrictions are in each case determined by the laws, charter, and ordinances, and may in general be stated as follows:

1. No expenditure may be made except for a public purpose and must be within the powers of the municipality.
2. No expenditure may be made except pursuant to an authorization or appropriation by the governing body.
3. No municipal funds may be expended except in accordance with the purpose for which the funds were raised.
4. Total revenues from taxes in a given period may not exceed the statutory limitations on tax-levying.
5. Total borrowing may not exceed the statutory limitation on outstanding indebtedness.

The economic restrictions may be stated as follows:

1. Taxation should be used to finance all expenditures which in general benefit all citizens equally, including the administration, operation, and maintenance of municipal departments, interest and principal on indebtedness, and minor capital expenditures (outlay).
2. Special assessments should be used to finance all expenditures which benefit particular individuals. Thus, where the construction of a pavement enhances the value of property the owner should pay his share through a special assessment.
3. Short-term loans should be made only in anticipation of tax collections.

4. Long-term loans should be made only for *major* outlays and the life of the bonds should be commensurate with the life of the property.
5. Expenditures to operate and maintain public utilities including depreciation and taxes should be paid by the consumer through rates which will cover cost and profit to the municipality on its investment. Construction (outlay) should be paid by borrowing (major) or taxation (minor).

In concluding the subject of municipal finance note should be made of the nature of municipal credit. Where private corporations offer the lender earning power, assets, and personal reputation as security for his loan, the municipal borrower offers its tax-levying power and assessed valuation. To the accountant this difference is of interest in that it diminishes the importance of the muncipal balance sheet in connection with municipal loans.

Differences Between Municipal and Private Corporations

In summary, the peculiarities of municipal corporations may be thus stated and compared with those of private corporations:

Public Corporations	*Private Corporations*
1. Purpose of Organization	
To promote the well-being of members by rendering services at cost.	To make money by the sale of its product at cost plus profit.
2. Ownership	
Owned by its citizens who involuntarily contribute capital, exercise ultimate control in management, receive benefits in the shape of services at cost.	Owned by its stockholders who voluntarily contribute capital, exercise ultimate control in management, receive earnings in the shape of dividends, and share residual assets on dissolution.
3. Organization	
Important elements of decentralization.	Tendency toward centralization of authority and control.

4. Administration

Administered by a governing body and officials with closely defined powers, the expenditure of funds being limited by appropriations.	Administered by directors and officials who have wide powers of discretion and are seldom limited in the expenditure of funds by appropriations.

5. Methods of Securing Capital

Capital Secured:	Capital Secured:
(a) From its beneficiaries by taxation.	(a) From its stockholders by sale of capital stock or assessment.
(b) From individuals by special assessment for services at cost.	(b) Borrowing on long- or short-time loans.
(c) From individuals by charge for services at cost plus profit.	(c) Retaining earnings in the business.
(d) Borrowing on long- or short-term loans.	

6. Bases of Credit

Credit based on:	Credit based on:
(a) Its tax-levying power as measured by limitations on levies and assessed valuation.	(a) Its assets.
(b) Occasionally on its assets.	(b) Its earning power.
	(c) Personal reputation of its officers and stockholders

II. Classification of Accounts

The Problem of Municipal Accounting

The problem of municipal accounting may be stated as involving the establishment of such a system of reports, records, and forms under adequate control and internal check as will permit the determination of the following conditions:

1. *Correct Financial Condition.* Assets and liabilities must be recorded to show the proprietary interest of the citizens; they must be classified to show the relationship of current assets to

current liabilities; they must be divided to show the status of each *fund*. The Proprietorship account must be so analyzed as to show the budgetary condition. Indebtedness must be shown in its relation to debt limitation and assessed valuation.

2. *Correct Income and Outgo*. Revenues and expenditures must be classified and compared to show adequacy of each method of financing expenditure. Comparisons must be had of actual revenues with budget estimates and actual expenditures with budget appropriations. Detailed information must be available in connection with operating costs to permit comparisons on a unit cost basis.

In addition to the above there exists the problem of uniform municipal accounting. In order to benefit by the comparisons and statistics made available thereby, municipalities should keep their accounts on as nearly a uniform basis as is possible and to this end the accountant should be familiar with the standard classifications issued by the United States Census Bureau and state supervising bodies. While each municipality has its own peculiar problems it should have no great difficulty in adopting the uniform accounting system.

Classification of Accounts

Municipal accounts are classified in a variety of ways the more important of which may be called "primary" the less important "secondary" classifications. The primary classifications—usually of control accounts—are two in number. Secondary classification usually consists of detail accounts built up "under" the control accounts.

The primary classifications are:

1. Classification by type of account.
2. Classification by fund.

By Type. Classification by type is shown in the following schedule, in which a comparison is made with the corresponding classification of the accounts of a private corporation:

Public Corporation

I. Assets:
  1. Current
  2. Deferred Charges
  3. Investments
  4. Fixed

II. Liabilities:
  1. Current
  2. Deferred Credits
  3. Fixed

III. Proprietorship:
  1. Proprietary Reserves
  2. Surplus
  3. Current Income and Outgo

IV. Revenues

V. Non-Revenue Receipts

VI. Expenditures:
  1. Expenditures from Revenue:
    (a) Administration
    (b) Operation
    (c) Maintenance
    (d) Interest on Indebtedness
    (e) Principal on Indebtedness
  2. Capital Outlay from Revenue
  3. Capital Outlay from Non-Revenue Receipts

Private Corporation

I. Assets:
  1. Current
  2. Deferred Charges
  3. Investments
  4. Fixed

II. Liabilities:
  1. Current
  2. Deferred Credits
  3. Fixed

III. Proprietorship:
  1. Proprietary Reserves
  2. Surplus
  3. Undivided Profits
  4. Current Profit and Loss

IV. Revenues

V. Expenses

In the above comparison it will be noted that no great difference exists in the balance sheet accounts. The income accounts, however, are fundamentally different owing to the fact that the municipal corporation is not a "profit and loss" enterprise. It becomes necessary then to adopt a distinct terminology such as the above, in which the nomenclature may be explained as follows:

Revenue. This account includes all income accruing from taxes, licenses, permits, rates, and miscellaneous charges.

Non-Revenue. This account includes principally income from the sale of bonds. In the private corporation monies so received are credited directly to the appropriate balance sheet accounts, but in the public corporation they are credited to an income account in order to permit a comparison with the expenditures made therefrom. At the close of the fiscal period they are closed to the income account in the same manner as a revenue account. After closing, a transfer is made to the appropriate balance sheet account.

Expenditures. This account includes the cost of all services rendered by the municipality and is distinguished from expense in that it includes capital items or outlay. Here we find a difference similar to that existing in the non-revenue receipts. Capital outlay, chargeable in the case of the private corporation to the asset account direct, is charged by the municipal corporation to an expenditure account and is closed at the end of the fiscal period to the appropriate income account. After closing, the total amount of outlay is transferred to the fixed asset accounts.

Expenditures are divided into three groups. The first includes expenses (administration, operation, and maintenance) and interest and principal on indebtedness (including payments to sinking fund). The bulk of the expenses should be financed by taxation and miscellaneous charges. The second includes outlay financed by taxation (minor outlays) or special assessment. The third includes outlay financed by borrowing.

The basic distinction, then, in the municipal income accounts lies in the fact that all items affecting the budget, whether expense or capital outlay, revenue or non-revenue, must be included therein. Depreciation may be used to illustrate this difference. While it is chargeable as a cost on the records of the private corporation, it must be charged direct to surplus (or a non-budget expenditure account) on the municipality's ledger, since it is not provided for in the budget and is required only as a valuation

account and an element in cost statements. The municipality borrows to construct buildings, for instance, and includes in its budget each year an instalment on the indebtedness rather than depreciation.

Classification by Fund. In addition to the above classification by type it is essential that there be a classification by fund. The accounts of the municipality fall naturally into groups based on the financial method, each group having its own asset, liability, proprietorship, revenue, and expenditure items. This classification must be maintained along with the first primary grouping, i.e., all accounts like Cash, Accounts Receivable, Inventory, etc., must be divided in accordance with the funds listed below:

1. General Fund. This group includes all accounts pertaining to finance by taxation and miscellaneous charges.
2. Special Assessment Fund. This group includes all accounts pertaining to finance by special assessment (for outlay).
3. Utility Fund. This group includes all accounts pertaining to finance by charges at cost-plus-profit (municipal public utilities).
4. Capital Fund. This group includes all accounts pertaining to finance by long-term loans.
5. Sinking Fund. This group includes all accounts of the sinking fund for retirement of non-serial bonds.
6. Trust Fund. This group includes all accounts pertaining to the trust relationships of the municipality.

With the dual primary classification, that by type and that by fund, the accountant can prepare not only a consolidated balance sheet and income statements, but also an individual balance sheet and income statement for each fund. In the consolidated statements interfund transactions, such as loans from one fund to another, are eliminated.

Secondary Classifications

The secondary classifications depend upon the information required in each case. Assets and liabilities are grouped into cash, taxes receivable, special assessments receivable, etc. (See

schedule of accounts below.) Liabilities are likewise divisible into audited vouchers, contracts payable, etc. Proprietorship subclassification is discussed later.

Revenues are grouped by *source*.

Expenditures present the most difficult problem of subclassification because of the necessity for several bases of classification, as follows:

1. Function. The accounts must show the cost of each function exercised, such as education, recreation, charity, etc.

2. Object. In several connections it is desirable to state expenditures in terms of salaries, wages, supplies, telephone and telegraph, etc.

3. Character. Operation maintenance and fixed charges should be shown separately.

In order to illustrate the classification of municipal accounts in a somewhat more detailed manner the following schedule of accounts covering the needs of a small city is presented:

Assets

CURRENT
- Cash
- Taxes Receivable
  - Reserve for Uncollectible Taxes*
- Other General Accounts Receivable
  - Reserve for Uncollectibles
- Special Assessments Receivable (outlay)**
  - Reserve for Uncollectible Special Assessments
- Utility Receivables
  - Reserve for Uncollectible Utility Receivables

PREPAID
- Prepaid Expenses
  - Insurance
  - Interest
  - Rent
- Stores

* The charge creating this reserve may be made against revenue or to unclassified expenditure.

** Where special assessments are due in instalments over a period of years only the current instalment may be treated as a current asset, the remainder being included under "fixed" instalments.

INVESTMENTS
- General
- Sinking Fund
- Trust Funds

FIXED
- Land and Land Improvements
  - Reserve for Accrued Depreciation
- Buildings and Other Attached Structure
  - Reserve for Accrued Depreciation
- Machinery and Equipment
  - Reserve for Accrued Depreciation
- Construction in Progress
  - Assessable Improvements
  - Non-Assessable

INTERFUND (to provide for amounts due one fund from another)
- General
- Special Assessment
- Utility
- Capital
- Sinking Fund

Liabilities

CURRENT
- Audited Vouchers
- Contracts Payable
- Temporary Loans in Anticipation of Taxes
- Other Current Liabilities

PREPAID
- Revenues Received in Advance

FIXED
- Bonded Indebtedness
  - General Bonds
  - Special Assessment Bonds† (to finance construction by special assessments whose payment is deferred for a period of years)
    - Direct Obligation
    - Guaranteed‡
  - Utility Bonds

† These bonds are usually serial, due over a period of from five to fifteen years. The current instalment is included under current assets in preparing statements.

‡ Where the property owner is given a number of years in which to pay his special assessments, the cost is meanwhile financed by these bonds which are a liability of the taxpayer guaranteed by the city. Receipts from special assessments each year should be sufficient to pay maturing bonds.

INTERFUND (to provide for amounts due one fund by another)
- General
- Special Assessment
- Utility
- Capital
- Sinking Fund

Proprietorship

SURPLUS (or DEFICIT)
- General
- Special Assessment
- Utility
- Capital
- Sinking Fund
  - Required
  - Excess over Requirements
- Trust

INCOME AND OUTGO (current year)
- General
- Special Assessment
- Utility
- Capital
- Sinking Fund
- Trust

Revenues

GENERAL
- Taxes and Tax Penalties
- Licenses and Permits
- Fines and Forfeits
- Grants and Gifts
- Departmental Earnings (including special assessments, so called, for miscellaneous services, such as street cleaning, sidewalk repair, etc., as distinguished from special assessments covering construction or outlay)
- Interest
- Miscellaneous
- Interfund
  - Taxes from Other Funds

Profit on Investments in Other Funds (utility)
Other Transfers

SPECIAL ASSESSMENT
- Special Assessments (for outlay only)
- Interest
  - On Deposits
  - On Deferred Special Assessments
- Interfund
- Special Assessments Paid by Other Funds
- Interest Paid by Other Funds

UTILITY (following Public Service Commission requirements)
- Operating Revenues
- Non-Operating Revenues
- Interfund
  - Revenues from Other Funds (general fund for fire protection, street lighting, etc.)

CAPITAL
- Interest on Deposits

SINKING FUND
- Interest
- Profit on Sale of Securities
- Interfund
  - Interest on Loans to Other Funds
  - Annual Instalment on Non-Serial Bonds from General Fund

TRUST
- Interest
- Profit on Sale of Securities
- Gifts and Other Revenues
- Interfund
  - Revenues from Other Funds

Non-Revenue Receipts

INDEBTEDNESS
- Temporary Loans
- Bonds Issued (classified by project)
- Interfund
  - Loans from One Fund to Another
  - Offsets to Outlay
  - Agency—State and County Taxes Collected

Expenditures

OPERATION, MAINTENANCE, AND INDEBTEDNESS
General
- Administration
- Protection of Person and Property
- Health Conservation and Sanitation
- Charities and Corrections
- Highways and Bridges
- Education and Recreation
- Public Service Enterprises (except profit-making utilities)
- Indebtedness
  - Interest
  - Principal
- Unclassified
- Interfund
  - Payments for Services to Utility Fund
  - Instalments on Non-Serial Bonds to Sinking Fund
- Other

SPECIAL ASSESSMENT
- Interest on Special Assessment Bonds

UTILITY
- Operating expenses
- Depreciation
- Interfund
  - Taxes to General Fund
  - Profit to General Fund

SINKING FUND
- Administrative Expenses
- Loss on Sale of Securities
- Indebtedness
  - Principal on Non-Serial Bonds Retired

TRUST
- Administrative Expense
- Loss on Sale of Securities
- Other Expenses

OUTLAY FROM REVENUE
General
- Classify in same manner as expenditures for operation and maintenance. Outlay for utility fund charged to Outlay from Revenue-Public Service Enterprises.

Special Assessment
- Classify in same manner as expenditure for operation and maintenance.

Non-Revenue Expenditures
- Temporary Loans
- Outlay from Bond Issues
  - Classify by project and in accordance with accounts under operation and maintenance.
- Agency—State and County Taxes
- Interfund
  - Repayment of Interfund Loans

Budget Accounts

So far no mention has been made of the classification of fund or budget accounts. In comparing the public with the private corporation one of the principal distinctions to be noted is in the control of expenditures by appropriations. In order to record the status of these appropriations (and other budget accounts) it is necessary to maintain a separate set of accounts sometimes known as "fund" accounts but more properly designated as "budget" accounts to avoid confusion with the term "fund" as applied to the primary classification of a municipality's regular accounts. Although kept in a separate ledger, these accounts are in effect divisions of the municipality's proprietorship accounts. They may be classified as follows:

1. Budget debits, including items from which expenditures may be made.
2. Budget credits, including all commitments made against budget debits.
3. Budget surplus, representing funds available for further appropriation.
4. Revenue estimates, including estimates of revenues to accrue in the ensuing period.
5. Appropriations, including all authorizations to incur liabilities.

This primary classification of budget accounts may be subclassified as shown in the following schedule:

1. Budget Debits
   - (a) Excess of Cash over Immediate Demands for Cash. This account equals in amount the excess of cash over audited vouchers and other liabilities presently due and payable.
   - (b) Available Balance. This account includes the accounts receivable and other items which will be presently liquidated by cash receipt.
   - (c) Non-Available Balance. This account includes prepaid items, store and other accounts which will not be liquidated presently by cash receipt.
   - (d) Bonds Authorized and Unissued. This account includes bonds which have been authorized but not sold.
   - (e) Estimated Revenues and Non-Revenue Receipts. This budget debit covers a series of accounts classified in accordance with the regular revenue and non-revenue receipt accounts, and shows the estimated amounts which will accrue in the ensuing period. As revenues accrue they are credited here so that these accounts show the unrealized balance of budget revenue estimates.
2. Budget Credits
   - (a) Appropriations. These budget credits consist of a series of accounts classified according to the regular expenditure classification and cover the appropriations for the ensuing period. Actual expenditures are charged to the accounts so that the balance represents unexpended appropriations.
   - (b) Reserve for Purchase Orders. When purchase orders are issued the appropriation accounts are charged and this account credited. When the

voucher is audited this account is charged and Excess Cash credited.

(c) Reserve for Contracts. This account is similar to the Reserve for Purchase Orders, except that it covers contracts awarded rather than purchase orders issued.

(d) Reserve for Temporary Loans. This account is credited when temporary loans are made and charged when they are repaid.

3. Budget Surplus. The excess of budget debits over credits shows the amount available for further appropriation. It is classified as follows:

(a) Reserve for Non-Available Balance. This account keeps out of free budget surplus an amount equivalent to unavailable budget debits.

(b) Reserve for Bonds Authorized and Unissued. This account reserves out of the surplus available for appropriation an amount equivalent to the bonds authorized and unissued.

(c) Unappropriated Surplus. This account shows the amount available for further appropriation.

It should be noted in passing that all budget accounts must be subclassified as to funds (General, Special Assessment, Utility, Capital, Sinking Fund, and Trust) so that separate budget statements may be prepared for each fund.

III. Accounting Records and Forms

Type of Records

The records, books, and forms used by the municipality vary with the circumstances of each case. Thus, in one municipality it may be expedient to place the accounts on a cash receipt and disbursement basis during the year with an accrual of revenue and expenditure at the closing date. Wherever it is possible the accounting system should be on the accrual basis.

CITY OF ——————
STATE OF ——————

TAX ROLL LEVY FOR THE YE

Bill No.	OWNER	ADDRESS		DESCRIPTION	Lot	Block	VALUE AS FIXED BY BOARD OF REVIEW		
		No.	Street				Exclusive of Buildings	Improvements (Buildings)	Land and Improvements

Form 1. (a) Tax Roll or Tax Ledger (left half)

AR 1921 PAGE____________

SPECIAL ASSESSMENTS											Real Estate Delinquent Rolls 1920		
Water Mains and Services	Removal of Snow and Ice	Sidewalk Construction and Repairs	Sewer Mains and Laterals	Street Improvements			State, County, School and City Tax	Total Amount of Tax and Special Assessments	Date of Payment	Receipt Number	Amt. Returned Delinquent to County Treas.	2% Penalty	

Form 1. (b) Tax Roll or Tax Ledger (right half)

CLASS OF REVENUE______

______192__

Line No.	Last Reading	Consumption	Amount Metered	Amount Flat	Folio	Supplies and Labor	Total Charge	Penalty	Cash Paid	Disc. and Allow	Date	Arrears
00												
01												
02												
03												
04												
28												
29												
30												
31												
32												
33												
34												

Form 2. (*a*) *Utility*

Page______

CONSUMERS

______192__

ADDRESS	NAME	Line No.	Bro't. For. Arrears	Last Reading	Consump-tion	Amount Metered	Amount Flat	Folio	Supplies and Labor	Total Charge	Penal-ty
	Brought Forward	00									
		01									
		02									
		03									
		04									
		28									
		29									
		30									
		31									
		32									
		33									
		34									
	Forward										

Form 2. (*b*) *Utility*

192__

Last Reading	Consumption	Amount Metered	Amount Flat	Folio	Supplies and Labor	Total Charge	Penalty	Cash Paid	Disc. and Allow	Date	Arrears

Ledger (face)

REGISTER

192__

Cash Paid	Disc. & Allow	Date	Arrears	Last Reading	Consumption	Amount Metered	Amount Flat	Folio	Supplies and Labor	Total Charge	Penalty	Cash Paid	Disc. & Allow	Date	Arrears

Ledger (reverse)

To indicate the type of records employed in municipal accounting the following typical examples are presented:

Ledgers. A general ledger covering all municipal accounts constitutes the basic record and is amplified by subsidiary ledgers where required as follows:

1. Tax ledger or tax roll, in which the tax accounts of the various individuals appear. (Form 1.)
2. Special assessment ledger, containing the detail of special assessments receivable.
3. Sundry accounts receivable ledger.
4. Utility receivable or customers ledger. (Form 2.)
5. Stock or stores ledger corresponding to stock ledgers used by private corporations.
6. Investment ledger containing detail of investments.

Page No.__

BOND ISSUE FOR IMPROVEMENT OF____________________

__________FROM________________TO__________

TOTAL ISSUE $__ PAYABLE AT CITY TREASURER'S OFFICE RATE OF

ISSUE AUTHORIZED__________ 19

	DATE	Bond Paid by Check No.	Folio	DEBIT	CREDIT BALANCE	CREDIT	Folio	Date of Issue			Bond No.	WHEN DUE
								Mo.	Day	Year		

Form 3. Bond Register

Reverse of form bears the heading "Bond Register" of nine columns like the last

7. Property ledger containing detail of fixed assets.
8. Creditors ledger containing detail of audited vouchers.
9. Contract ledger containing detail of contracts payable.
10. Bond ledger containing detail of bonded indebtedness. (Form 3.)
11. Revenue ledger containing detail of revenue control accounts.
12. Expenditure ledger containing detail of expenditure contract accounts.
13. Budget ledger containing the detail budget accounts.

Books of Original Entry. These books are:

1. Cash
   (a) Treasurer's cash book in which are recorded receipts, disbursements, bank deposits, and bank withdrawals.

COUPON STREET IMPROVEMENT

INTEREST 5% PAYABLE ANNUALLY, APRIL 1st.

ISSUED TO	TRANSFERS		DUE 19		
			Prin.	Int.	Amount of Check

for 10-Year Bonds

and a space for page numbers, and consists
right-hand column of this form.

Page______ PAY ROLL VOUCHERS DISTRIBUTION RECORD

DATE	IN FAVOR OF	PARTICULARS	Voucher or Reference No.	Audited Vouchers Credits	ALLOWED		Disallowed or not Acted Upon	PAID			REMARKS
					Date	Amount	Amount	Date	Check No.	Amount	
	Brought Forward										

Form 4. (a) Voucher Register (face)

CITY OF——— , WATER DEPARTMENT Page______

GENERAL LEDGER				OPERATING EXPENSES								Property and Plant		
Account	Folio	✓	Miscel. Debits Amount	Steam Generation	Steam Power Pumping	Electric Power Pumping	Distribution	Commercial	General	Undistributed				

Form 4. (b) Voucher Register (reverse)

(b) Auditor's cash book in which are recorded treasurer's reports of receipts and disbursements. If the accounts are kept on a cash basis, this book is replaced by a cash receipt journal and a cash disbursement journal.

2. Revenue

Revenues are accrued from various sources, such as the tax roll, utility roll, etc., while a revenue journal is used to accrue various miscellaneous items.

3. Expenditures

(a) Voucher register (Form 4, Pay-Roll, Water Department)

(b) Register of purchase orders issued.

4. Stores

The usual type of material received and issued record is used.

5. General Journal

No. B....................

PAY-IN VOUCHER

Date..............192...

Mr..

Pay to the City Treasurer $............................

For..

Description......................................

Lot..........Block............Add....................

......................................City Clerk

Payment must be made to City Treasurer
Original as Receipt to Payor

Form 5. (a) Pay-In Voucher (original)

No. B....................

PAY-IN VOUCHER STUB

Date................192...

To the Treasurer: Collect from

Mr...

Amount $..................

For..

Description..

Lot..........Block............Add.....................

....City Clerk

Treasurer will detach and retain this Stub.

Form 5. (b) Pay-In Voucher (duplicate)

No. B....................

PAY-IN VOUCHER STUB

Date...:............192...

To the Comptroller
The Treasurer will collect from

Mr...

This Stub accounted for on Treasurer's Report No....

Amount $..................

For..

Description..

Lot..........Block............Add.....................

....

Issuing Office will detach and retain this Stub.

Form 5. (c) Pay-In Voucher (triplicate)

CITY OF ____________
STATE OF ____________

No. 13106 ....

MEMORANDUM TAX BILL, 1921

To ....

.... Street.

....

Description ....

.... Lot .... Block ....

.... Addition

Assessed Valuation, Land, $ .... Buildings, $ .... , Total, $ ....

Page of Tax Roll	SPECIAL ASSESSMENTS: Water Main Service Connection	Removal of Snow and Ice	Sidewalk Construction Repair	Sewer Main Lateral	Street Improvement		State, County, School and City Tax	Total Amount All Taxes and Assessments

Penalty	
Total Taxes and Penalty	

PENALTY: Taxes are payable without penalty from Jan. 5th to and including Jan. 31st. If any tax is not paid before Feb. 1st, a penalty of 2% will be added to the tax. Taxes not paid before March 15th will have to be paid to the county treasurer.

Should you desire to pay by mail, checks on Madison banks, U. S. Postal or Express Money Orders or bank drafts on Chicago only will be accepted. Make checks or money orders payable to Carl Moe, City Treasurer.

BRING THIS BILL WITH YOU if paid in person or enclose it with check or money order. Office hours of the treasurer are from 9:00 to 12:00 A. M. and from 2:00 to 4:00 P. M.

THIS IS NOT A TAX RECEIPT

No. 13106 ....

Receipted bill for Real Estate Tax, Levy 1921, and Special Assessments charged against the property herein described.

....

Lot .... Block ....

.... Addition

Assessed Valuation, Land, $ .... Buildings, $ .... , Total, $ ....

Page of Tax Roll	SPECIAL ASSESSMENTS: Water Main Service Connection	Removal of Snow and Ice	Sidewalk Construction Repair	Sewer Main Lateral	Street Improvement		State, County, School and City Tax	Total Amount All Taxes and Assessments

Penalty	
Total Taxes and Penalty	

Received Payment 192

....
City Treasurer

Form 6. Real Estate Tax Receipt

Triplicate copy is identical with duplicate, except that it is headed "Duplicate Real Estate Receipt"

Forms. The following forms are used:

1. Cash. The treasurer reports cash receipts on a daily summary of cash receipts. Each individual receipt is substantiated by a duplicate of the receipt issued to the payee which is one of the following forms:

(a) Treasurer's triplicate receipt issued in triplicate, one copy going to payee, one to the municipal auditor, and one remaining in the treasurer's possession.
(b) Pay-in vouchers (Form 5) issued by departments directing the treasurer to collect certain amounts. Distribution of copies as under (a).
(c) Cut receipts similar to those used by railway train conductors.
(d) Tax receipts. Distribution as under (a) above. (Form 6, which applies to real estate taxes. A similar form is used for income and personal property taxes.)
(e) Utility receipts. Distribution as under (a) above.

Disbursements in municipalities are often made by an order upon the treasurer issued by the auditor and paid by the treasurer through the issuance of a treasurer's check. This practice causes many inconveniences because of the fact that orders issued are not immediately presented to the treasurer for payment, thus causing "outstanding order" accounts. This may be eliminated by the use of an order check (Form 7), which is in effect an order combined with a check and is signed by the treasurer before issuance.

2. Expenditures are covered by the following forms:

(a) Requisition for materials or services
(b) Purchase order (Form 8)
(c) Received report
(d) Voucher jacket (Form 9)
(e) Time cards
(f) Pay-rolls
(g) Emergency orders

CITY OF ———— GENERAL FUND CERTIFICATE OF APPROPRIATION NO.

STATE OF ————

TO THE CITY TREASURER:

IT IS HEREBY CERTIFIED BY A VOTE OF THE COMMON COUNCIL, THE SUM OF

$ ————

PAYABLE IN EXCHANGE

1

WAS APPROPRIATED TO

VOUCHER NO.

———— MAYOR

PAY ROLL FOR MONTH OF

To FIRST NATIONAL BANK

———— CITY CLERK

Pay and Charge to Account of THE CITY OF ————

COVERING PERIOD (1:15) (16:31)

———— CITY TREASURER

NOT PAYABLE UNTIL SIGNED BY THE CITY TREASURER

Form 7. (a) Order Check (Pay-Roll)

CITY OF ——————

STATE OF —————

VOUCHER NO.

GENERAL FUND

CERTIFICATE OF
APPROPRIATION NO.

COVERING INVOICE NO.

$ ——————

PAYABLE IN EXCHANGE

1

DISCOUNT

TO THE CITY TREASURER:

IT IS HEREBY CERTIFIED THAT THIS APPROPRIATION WAS AUTHORIZED BY A VOTE OF THE COMMON COUNCIL

TO

—————————— MAYOR

To FIRST NATIONAL BANK

—————————— CITY CLERK

Pay and Charge to Account of
THE CITY OF ——————

—————————— CITY TREASURER

NOT PAYABLE UNTIL SIGNED BY THE CITY TREASURER

Form 7. (b) Order Check (General)

City of ______ **Purchase Order**
State of ______

............192.. **Nº W 100**

To............

....

Indicate above purchase order number on invoice

PLEASE FURNISH WATER DEPARTMENT:

Date wanted............

Ship by............ Classification............

Unit	DESCRIPTION	Amount

I certify an appropriation for the above is available.

.... CITY AUDITOR.

Signed CITY OF ______
Board of Water Commissioners

By............ Superintendent.

Please forward invoice immediately. No claim will be allowed unless supported by purchase order signed by the CITY AUDITOR.

FILL OUT AND RETURN WITH INVOICE TO SUPT. WATERWORKS

IMPORTANT: All accounts or demands against the City, before the same shall be allowed, shall be verified by affidavit.—Section 23, Chapter 7,—Charter.

STATE OF ______ }
CITY OF ______ } ss.

The Undersigned, being duly sworn, on oath says, that the attached claim, in the amount of $............, due............ is just and correct, and unpaid, and justly chargeable to the City of ______ and that neither the whole nor any part thereof has been previously presented to and rejected by the Common Council.

....
Individual's name only must be signed to above affidavit.

Sworn to and subscribed to before me, this }
............day of............192.... }

............Notary Public.

I certify an appropriation for the above is available.

.... CITY AUDITOR.

By............ Superintendent.

received in good order except as noted.

....
To be signed by employee receiving goods.

the above work or supplies were received in good order except as noted.

.... Superintendent.

Form 8. Purchase Order

Original to vendor, second copy to auditor, third to department receiving goods.

CITY OF————

INVOICE

TO______________________________DR.

______STREET NO.____________________

CITY____________________STATE__________

TERMS:____________SHIPPED VIA__________________19______

STATE OF__________ } SS.
COUNTY OF__________

The Undersigned being duly sworn, upon his oath says that the attached or foregoing claim__________

____________________ *is just, correct and true and that no part thereof has been audited, allowed or paid.*
(TO BE WRITTEN IN)

Subscribed and sworn to before me this __________ ____________________

*day of*____________________*A.D., 19*____ ____________________

____
Notary Public

Form 9. (*a*) *Invoice* (*face*)

In addition to the above, various types of forms are required, such as journal vouchers, job orders, court dockets, council proceedings, etc.

Statements

The value of a municipal accounting system can be no greater than the worth of the information presented in statements and reports prepared therefrom, so that the accountant must exercise great care in preparing clear and concise exhibits and schedules. This is particularly true in the case of municipal accounts because municipal officials and taxpayers as a class are not familiar with accounting procedure and technique.

To illustrate the manner in which statements and reports should be drawn up and presented the following exhibits are submitted. Together with these statements and reports, the various types of journal entries are shown for the purpose of illustrating the methods by which the accounts peculiar to the municipal corporation are handled.

Voucher No.__________

CITY OF ———
STATE OF ———
To

Amount Claimed $__________
Amount Allowed, $__________
Paid by Certificate of Appropriation No.__________

Description	Detail		Department Total	

Price O.K.__________
Extensions O.K.__________
Order No.__________

I certify an appropriation is available to meet this claim, and recommend its allowance.

A
O
R__________
City Auditor

Filed__________ 19___

Recommended by Committee on Claims for _____allowance.

__________ 19___

__________Allowed by Council.

__________ 19___

Form 9. (b) Invoice (reverse)

Statements of Financial Condition—General Fund

Statements of financial condition must be prepared to show the financial condition of each fund as well as the consolidated financial condition of all funds. Along with each balance sheet there will be presented an analysis of the budget position showing the amount of funds available for further appropriation. The budget surplus in each case should be reconciled with the surplus

shown by the balance sheet. The balance sheet of the general fund follows:

Statements of Financial Condition

Exhibit A

General Fund

Assets

Cash on Hand and in Banks		$500,000.00
Taxes Receivable	$150,000.00	
Less: Reserve for Uncollectible Items	40,000.00	110,000.00
Other General Accounts Receivable	$ 50,000.00	
Less: Reserve for Uncollectible Items	10,000.00	40,000.00
Investments		75,000.00
Prepaid Expenses		5,000.00
Stores		30,000.00
Due from Other Funds		25,000.00
Total Assets		$785,000.00

Liabilities

Audited Vouchers	$300,000.00
Contracts Payable	150,000.00
Temporary Loans	120,000.00
Revenues Paid-In in Advance	4,000.00
Due Other Funds	10,000.00
Total Liabilities	$584,000.00

Proprietorship

Excess of Assets over Liabilities	$201,000.00

Budget Position

Excess of Cash over Immediate Demand for Cash	$ 40,000.00
Available Balance (Accounts Receivable)	250,000.00
Non-Available Balance (investments and deferred charges in excess of deferred credits)	31,000.00
Estimated General Revenues—Unrealized Balances	70,000.00
Total	$391,000.00

Reserve for Purchase Orders	$ 20,000.00
Reserve for Contracts	30,000.00
Reserve for Temporary Loans	120,000.00
Unexpended Balances of Appropriations	90,000.00
Total	$260,000.00

Budget Surplus*		$131,000.00
Reserve for Non-Available Balance	$31,000.00	
Unappropriated Surplus†	100,000.00	$131,000.00

The following journal entries indicate the manner in which the peculiar accounts of the general fund are handled:

1. Regular Accounts
   (a) To enter tax roll:
      Debit:
         Taxes Receivable
      Credit:
         Agency Receipts—State and County Taxes
         Special Assessments Receivable (portion included in tax roll)
         Utility Receivables (delinquents included in tax roll)
         Revenue from Taxes
         Revenue from Special Assessments‡

* Reconciled to balance sheet surplus as follows:

Balance Sheet Surplus	$201,000.00	
Add: Revenues Unrealized	70,000.00	$271,000.00
Deduct:		
Purchase orders issued for which no audited voucher appears	$20,000.00	
Contracts awarded but no liability incurred	30,000.00	
Unexpended balances of appropriations already made	90,000.00	
Total		140,000.00
Budget Surplus as above		$131,000.00

† While the budget surplus appears as $131,000, it must be noted that in order to show the amount immediately available for further appropriation a reserve for non-available balances must be set up.

‡ When any charges, such as special assessments, are placed on the tax roll, they assume the status of taxes receivable and are included under that head from then on.

2. Budget Accounts
   (a) To open accounts at the beginning of the fiscal period:
      Debit:
         Excess of Cash over Immediate Demands for Cash
         Available Balance
         Non-Available Balance
      Credit:
         Reserve for Non-Available Balance
         Unappropriated Surplus
   (b) To enter budget as adopted by the governing body:
      Debit:
         Estimated Revenues from Taxes and Miscellaneous Charges
      Credit:
         Appropriations
   (c) To enter accounts receivable when charge to various receivable accounts is made in regular accounts:
      Debit:
         Available Balance
      Credit:
         Estimated Revenues from Taxes and Miscellaneous Charges.
   (d) To enter cash collections:
      Debit:
         Excess of Cash over Immediate Demand for Cash
      Credit:
         Available Balance
         or
         Estimated Revenues from Taxes and Miscellaneous Charges

(e) To enter purchase orders issued and contracts awarded:
Debit:
Appropriations or
Non-Available Balance*
Credit:
Reserve for Purchase Orders
Reserve for Contracts

(f) To enter amount of non-available assets becoming available:
Debit:
Appropriations
Credit:
Non-Available Balance

(g) To enter vouchers audited for payment:
Debit:
Reserve for Purchase Orders
Reserve for Contracts
Credit:
Excess of Cash over Immediate Demands

(h) To enter temporary loans made:
Debit:
Excess of Cash over Immediate Demands for Cash
Credit:
Reserve for Temporary Loans

(i) To close budget accounts:
Debit:
Appropriations (Unexpended Balances Lapsing)
Credit:
Estimated Revenues (Unrealized Balances)
Unappropriated Surplus

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* With each charge or credit to Non-Available Balance a corresponding entry must be made to the Reserve for Non-Available Balance account.

Special Assessment Fund

The financial condition of the special assessment fund is presented in a similar manner. Though various methods of finance are in vogue, a typical procedure would be as follows:

A street improvement is contemplated at an estimated cost of $15,000, of which $12,000 is to be charged to property-owners in the shape of special assessments, payable in 10 equal annual instalments (with 6% interest), and $3,000 is to be paid by the city. A contract is awarded covering the construction, the contractor being paid on completion of the street by the proceeds of bonds issued, of which $3,000 are a direct municipal obligation and $12,000 are in the form of a lien against the property benefited, guaranteed by the city. The bonds are serial, maturing over a period of 10 years, and bear 5% interest. Each year 1/10 of the bonds fall due and are paid together with interest by the annual instalment on special assessments received with interest from the taxpayer and by the direct obligation bonds and interest paid by the general fund.

The balance sheet appears as follows:

Exhibit B

Special Assessment Fund

Assets

Cash on Hand and in Banks		$ 150,000.00
Special Assessments Receivable:		
Current Instalment	$ 50,000.00	
Less: Reserve for Uncollectible	1,000.00	49,000.00
Special Assessments Receivable Deferred	$450,000.00	
Less: Reserve for Uncollectible	10,000.00	440,000.00
Assessable Construction in Progress		75,000.00
Land, Buildings, and Equipment (net of depreciation)		300,000.00
Total		$1,014,000.00

Liabilities

Audited Vouchers	$ 25,000.00
Contracts Payable	30,000.00

Special Assessment Bonds (portion due presently):		
Municipal		10,000.00
Guaranteed		45,000.00
Special Assessment Bonds (other):		
Municipal		80,000.00
Guaranteed		200,000.00
Loan from Sinking Fund		140,000.00
Total		$ 530,000.00

Proprietorship

Excess of Assets over Liabilities	$ 484,000.00

Budget Position

Excess of Cash over Immediate Demands for Cash		$ 40,000.00
Available Balance		49,000.00
Non-Available Balance		440,000.00
Bonds Authorized and Unissued		100,000.00
Estimated Revenues		100,000.00
Total		$729,000.00
Reserve for Contracts		$175,000.00
Unexpended Balance of Appropriations		15,000.00
Reserve for Special Assessment Bonds and Loans in Anticipation of Special Assessment		420,000.00
Total		$610,000.00
Budget Surplus		$119,000.00
Reserve for Bonds Authorized and Unissued	$100,000.00	
Reserve for Non-Available Balance*	20,000.00	
Unappropriated Surplus	*1,000.00*	
		$119,000.00†

* In excess of Reserve for Special Assessment Bonds not presently due.
† Reconciled to balance sheet surplus as follows:

Balance Sheet Surplus	$484,000.00	
Add:		
Estimated Revenues	100,000.00	
Bonds Authorized and Unissued	100,000.00	$684,000.00
Less:		
Reserve for Purchase Orders	$ 15,000.00	
Reserve for Contracts	175,000.00	
Excess of Fixed Assets over Fixed Liabilities	375,000.00	565,000.00
Budget Surplus as above		$119,000.00

The following journal entries illustrate the manner in which the peculiar accounts are handled:

1. Regular Accounts
   - (a) To enter contracts for construction of improvements:
     - Debit:
       - Construction in Progress — Non-Assessable
       - Construction in Progress—Assessable
     - Credit:
       - Contracts Payable
   - (b) To enter bonds issued to finance contracts:
     - Debit:
       - Cash
     - Credit:
       - Special Assessment Bonds. The bonds are of two classes, as follows:
         - (1) Direct liability bonds issued to pay for municipality's portion of construction of, for instance, street intersections, which are payable by city as a whole.
         - (2) Guaranteed bonds issued to pay property-owners' portion.
   - (c) To enter payment of contracts:
     - Debit:
       - Contracts Payable
     - Credit:
       - Cash
   - (d) To enter assessment of improvements:
     - Debit:
       - Special Assessments Receivable
     - Credit:
       - Revenue from Special Assessments

(e) To enter cash received from taxpayers and from general fund for municipality's bonds falling due:

Debit:

Cash

Credit:

Special Assessments Receivable

Interest on Deferred Special Assessments Receivable

Special Assessment Bonds Paid by General Fund

(f) To enter annual payment on bonds and interest due:

Debit:

Special Assessment Bonds

(1) Direct Liability

(2) Guaranteed

Interest on Guaranteed Bonds (interest on direct liability bonds is paid from the general fund)

Credit:

Cash

2. Budget Accounts

(a) To enter special assessment budget:

Debit:

Estimated Revenues and Non-Revenue Receipts

(1) Revenues from Special Assessment*

(2) Non-Revenue—Direct Obligation Bonds

Credit:

Appropriations for Improvements

(1) Assessable

(2) Non-Assessable

Appropriations for Interest†

* Including interest on deferred special assessments.

† On guaranteed special assessment bonds. Principal and interest on direct liability special assessment bonds, payable from general fund.

(b) To enter contracts as awarded:
Debit:
Appropriations
Credit:
Reserve for Contracts

(c) To enter bond issues authorized:
Debit:
Bonds Authorized and Unissued
Credit:
Reserve for Bonds Authorized and Unissued

(d) To enter sale of bonds:
Debit:
Excess of Cash over Immediate Demands for Cash
Credit:
Bonds Authorized and Unissued

Debit:
Reserve for Bonds Authorized and Unissued
Credit:
Estimated Non-Revenue Receipts from Direct Liability Bonds
Reserve for Special Assessment Bonds in Anticipation of Special Assessments

(e) To enter payment of contracts:
Debit:
Reserve for Contracts
Credit:
Excess of Cash over Immediate Demand for Cash

(f) To enter special assessments levied:
Debit:
Non-Available Balance*
Credit:
Revenues from Special Assessment

* As each instalment comes due it is transferred to Available Balance.

(g) To enter cash received from instalments on special assessments:

Debit:

Excess of Cash over Immediate Demands for Cash

Credit:

Available Balance

Estimated Revenues from Interest on Special Assessments Receivable

(h) To enter guaranteed bonds retired:

Debit:

Reserve for Special Assessment Bonds in Anticipation of Special Assessments

Credit:

Excess of Cash over Immediate Demands for Cash

Utility Fund

The utility fund covers the only "profit and loss" enterprises of the municipality. Inasmuch as all citizens are not necessarily consumers it becomes necessary in fixing utility rates to distinguish between the equities of the consumer and the taxpayer. To do justice between the two classes the following rules must be observed:

1. Rates must be fixed at such a point as will cover operation, maintenance, depreciation, taxes (paid to the general fund), and interest (or profit) on the municipality's investment in the utility.

2. Interest and principal on utility bonds must be paid by the general fund.

3. Capital outlay must be paid by bond issue or from the general fund.

4. The municipality as a whole must pay to the utility fund a fair rate for all services rendered, such as hydrant rental, street lighting, etc.

The balance sheet of the utility fund appears as follows:

Exhibit C

Utility Fund

Assets

Cash on Hand and in Banks		$ 75,000.00
Accounts Receivable	$125,000.00	
Less: Reserve for Uncollectibles	5,000.00	120,000.00
Prepaid Expenses		1,000.00
Stores		20,000.00
Fixed Assets (less depreciation)		1,000,000.00
Total		$1,216,000.00

Liabilities

Audited Vouchers	$ 25,000.00
Revenues Received in Advance	10,000.00
Interfund	25,000.00
Total	$ 60,000.00

Proprietorship

Excess of Assets over Liabilities	$1,156,000.00

Budget Position

Excess of Cash over Immediate Demands for Cash		$ 25,000.00
Available Balance		120,000.00
Non-Available Balance		11,000.00
Estimated Revenues		25,000.00
Total		$ 181,000.00
Reserve for Purchase Orders		$ 20,000.00
Unexpended Balance of Appropriations		15,000.00
Total		$ 35,000.00
Budget Surplus		$ 146,000.00
Reserve for Non-Available Balance	$ 11,000.00	
Unappropriated Surplus	135,000.00	$ 146,000.00*

* Reconciled to balance sheet surplus as follows:

Balance Sheet Surplus	$1,156,000.00	
Add:		
Estimated Revenues	25,000.00	$1,181,000.00
Less:		
Reserve for Unexpended Balances	$ 15,000.00	
Reserve for Purchase Orders	20,000.00	
Fixed Assets	1,000,000.00	1,035,000.00
Budget Surplus as above		$ 146,000.00

Capital Fund

The balance sheet of the capital fund is as follows:

EXHIBIT D

CAPITAL FUND

Assets

Cash on Hand and in Banks	$ 70,000.00
Stores	50,000.00
Land, Buildings, Machinery, and Equipment (net of depreciation)	3,000,000.00
Construction in Progress	100,000.00
Total	$3,220,000.00

Liabilities

Audited Vouchers	$ 25,000.00
Contracts Payable	30,000.00
Bonded Indebtedness (maximum limitation, $2,000,000)	1,200,000.00
Total	$1,255,000.00

Proprietorship

Excess of Assets over Liabilities	$1,965,000.00

Budget Position

Excess of Cash over Immediate Demands for Cash		$ 15,000.00
Non-Available Balance		50,000.00
Bonds Authorized and Unissued		150,000.00
Total		$ 215,000.00
Reserve for Purchase Orders		$ 25,000.00
Reserve for Contracts		10,000.00
Unexpended Balances of Appropriations		100,000.00
Total		$ 135,000.00
Budget Surplus		$ 80,000.00
Reserve for Non-Available Balance	$50,000.00	
Unappropriated Surplus	30,000.00	$ 80,000.00*

* Reconciled to balance sheet surplus as follows:

Balance Sheet Surplus	$1,965,000.00	
Add:		
Bonds Authorized and Unissued	150,000.00	$2,115,000.00
Less:		
Reserve for Unexpended Balance Purchase Orders and Contracts	$ 135,000.00	
Fixed Assets in Excess of Liabilities	1,900,000.00	2,035,000.00
Budget Surplus as above		$ 80,000.00

Sinking and Trust Funds

The sinking fund and trust fund balance sheets appear as follows:

EXHIBIT E

SINKING FUND

Assets

Cash on Hand and in Banks		$ 25,000.00
Investments		200,000.00
Interfund Loan		140,000.00
Total		$365,000.00

Liabilities

Audited Vouchers		$ 5,000.00

Proprietorship

Excess of Assets over Liabilities		$360,000.00
Required Reserve to meet Non-Serial Bonds	$345,000.00	
Surplus	15,000.00	$360,000.00

Budget Position

Excess of Cash over Immediate Demands for Cash		$ 20,000.00
Available Balance		200,000.00
Non-Available Balance		140,000.00
Total Surplus		$360,000.00
Reserve for Non-Serial Bonds	$345,000.00	
Unappropriated Surplus	15,000.00	$360,000.00

EXHIBIT F

TRUST FUND

Assets

Cash on Hand and in Banks	$15,000.00
Accounts Receivable	5,000.00

Investments	30,000.00
Interfund Receivables	10,000.00
	$60,000.00

Liabilities

Audited Vouchers	$10,000.00

Proprietorship

Excess of Assets over Liabilities	$50,000.00

Budget Position

Excess of Cash over Immediate Demands for Cash		$ 5,000.00
Available Balance		45,000.00
Estimated Revenues		5,000.00
Total		$55,000.00
Reserve for Purchase Orders	$4,000.00	
Unexpended Balances of Appropriations	6,000.00	10,000.00
Budget Surplus*		$45,000.00

Consolidation of Statements

The individual fund statements must be consolidated to show the financial condition as a whole. The method of consolidation and the resulting figures are shown in the following schedule in which all interfund items are eliminated:

* Reconciled to balance sheet surplus as follows:

Surplus per Balance Sheet	$50,000.00
Add:	
Estimated Revenues	5,000.00
	$55,000.00
Deduct:	
Reserves for Purchase Orders and Unexpended Balances	10,000.00
Budget Surplus as above	$45,000.00

Schedule G

Consolidation of Fund Accounts Contained in Exhibits A, B, C, D, E, and F

	Consolidated	Eliminations	General	Special Assessment	Utility	Capital	Sinking Fund	Trust
Assets								
Cash on Hand and in Banks (A)	$ 835,000		$500,000	$ 150,000	$ 75,000	$ 70,000	$ 25,000	$15,000
Accounts Receivable (current) (B)	324,000		150,000	49,000	120,000			5,000
Deferred Charges (C)	106,000		35,000		21,000	50,000		
Investments (B)	305,000		75,000				200,000	30,000
Deferred Special Assessments Receivable (C)	440,000			440,000				
Fixed Assets (Less Depreciation)	4,475,000			375,000	1,000,000	3,100,000		
Interfund:								
Due General from Utility		$ 25,000	25,000					
Due Sinking Fund from Special Assessment		140,000					140,000	
Due Trust from General		10,000						10,000
Total	$6,485,000	$175,000	$785,000	$1,014,000	$1,216,000	$3,220,000	$365,000	$60,000
Liabilities								
Audited Vouchers (A)	$ 390,000		$300,000	$ 25,000	$ 25,000	$ 25,000	$ 5,000	$10,000
Contracts Payable (A)	210,000		150,000	30,000		30,000		
Temporary Loans (H)	120,000		120,000					
Other Current Liabilities (A)	55,000			55,000				
Deferred Credits (C)	14,000		4,000		10,000			
Fixed Liabilities	1,480,000			280,000		1,200,000		
Interfund:								
Due Trust from General		$ 10,000	10,000					
Due Sinking Fund from Special Assessment		140,000		140,000				
Due General from Utility		25,000			25,000			
Total	$2,269,000	$175,000	$584,000	$ 530,000	$ 60,000	$1,255,000	$ 5,000	$10,000
Proprietorship	$4,216,000		$201,000	$ 484,000	$1,156,000	$1,965,000	$360,000	$50,000

	Consolidated	Eliminations	General	Special Assessment	Utility	Capital	Sinking Fund	Trust
(A) Excess of Cash over Immediate Demands*	$ 180,000	Add $ 35,000	$ 40,000	$ 40,000	$ 25,000	$ 15,000	$ 20,000	$ 5,000
(B) Available Balance	629,000	Deduct 35,000	250,000	49,000	120,000		200,000	45,000
(C) Non-Available Balance	532,000	140,000	31,000	440,000	11,000	50,000	140,000	
(D) Bonds Authorized and Unissued	250,000			100,000		150,000		
(E) Estimated Revenues	200,000		70,000	100,000	25,000			5,000
Total	$1,791,000		$391,000	$729,000	$181,000	$215,000	$360,000	$55,000
(F) Reserve for Purchase Orders	$ 69,000		$ 20,000		$ 20,000	$ 25,000		$ 4,000
(G) Reserve for Contracts	215,000		30,000	175,000		10,000		
(H) Reserve for Temporary Loans	120,000		120,000					
(I) Reserve for Special Assessment Bond and Loans	420,000			420,000				
(J) Unexpended Balances of Appropriations	226,000		90,000	15,000	15,000	100,000		6,000
(K) Reserve for Non-Available Balance	112,000		31,000	20,000	11,000	50,000		
(L) Reserve the Bonds Authorized and Unissued (D)	100,000			100,000				
(M) Reserve to Meet Non-Serial Bonds	205,000	$140,000					$345,000	
Total	$1,467,000		$291,000	$730,000	$ 46,000	$185,000	$345,000	$10,000
(N) Unappropriated Surplus	$ 324,000		**$100,000**	$ *1,000*	$135,000	$ 30,000	$ 15,000	$45,000

* Items A to N show how the budget amounts are arrived at.

Statements of Income and Outgo

Statements of income and outgo are also prepared for each fund showing the adequacy of the revenues raised to meet expenditure in each of the branches of finance. The individual statements are consolidated to show income and outgo of the municipality as a whole. In the consolidated statement interfund items are eliminated. These interfund items (see Schedule H) are as follows:

1. Payment made by the utility fund to the general fund of taxes equivalent to what a privately operated company would pay.
2. Payment made by the utility fund to the general fund of profit earned.
3. Payment made by the general fund to the utility fund for services rendered to the municipality.
4. Payment made by the general fund to the sinking fund covering annual instalment on non-serial bonds.
5. Payment made by the general fund to the trust fund (pensions).

These interfund items are merely typical and not inclusive.

The income and outgo statement is accompanied by an analysis of the surplus accounts during the year in which the following items appear:

Credits:

1. Excess of income over outgo.
2. Outlay during the year is added to the fixed assets as follows:
   (a) Outlay paid by the general fund is added to utility or capital fund assets.
   (b) Outlay paid by the special assessment fund is added to special assessment fund assets.
3. Bonds retired during the year are credited to Special Assessment, Utility, or Capital Surplus, depending upon the kind of bonds retired.

SCHEDULE H

CONSOLIDATION OF INCOME AND OUTGO

Accounts	Consolidated	Eliminations	General	Special Assessment	Utility	Capital	Sinking Fund	Trust
Income								
Taxes and Tax Penalties	$ 730,000	(A) $ 20,000	$ 750,000					
Licenses and Permits	25,000		25,000					
Fines and Forfeits	10,000		10,000					
Grants and Gifts	7,000		2,000					$ 5,000
Special Assessments:								
For Expense	20,000		20,000					
For Outlay	200,000			$200,000				
Departmental Earnings	15,000	(B) 25,000	40,000					
Public Service Enterprises	120,000	(C) 40,000	10,000		$150,000			
Interest	51,000		25,000	15,000	5,000	$ 1,000	$ 5,000	
Other	9,000		5,000		2,000		2,000	
Non-Revenue Receipts	500,000	(D) 55,000	200,000	50,000		250,000	50,000	5,000
Total	$1,687,000	$140,000	$1,087,000	$265,000	$157,000	$251,000	$ 57,000	$10,000
Outgo								
Administration	$ 15,600		$ 15,000				$ 500	$ 100
Protection of Person and Property	60,000	(C) $ 40,000	100,000					
Health and Sanitation	125,000		125,000					
Charities and Corrections	70,000		70,000					
Highways and Bridges	100,000		100,000					
Education and Recreation	150,000		150,000					
Public Service Enterprises	129,000	(A) & (B) 45,000	17,000		$157,000			
Payments to Pension Funds		(D) 5,000	5,000					
Indebtedness	162,000	(D) 50,000	175,000	$ 12,000			25,000	
Unclassified	6,000		5,000					1,000
Outlay from Revenue	350,000		110,000	240,000				
Non-Revenue Outlay	240,000					$240,000		
Non-Revenue Disbursement	200,000		200,000					
Total	$1,607,600	$140,000	$1,072,000	$252,000	$157,000	$240,000	$ 25,500	$ 1,100
Excess of Income over Outgo	$ 79,400		$ 15,000	$ 13,000		$ 11,000	$ 31,500	$ 8,900

Surplus Account

	Consolidated	General	Special Assessment	Utility	Capital	Sinking Fund	Trust
Balance at Beginning of Period	$3,871,600	$186,000	$301,000	$1,086,000	$1,929,000	$328,500	$41,100
Excess of Income over Outgo above	79,400	15,000	13,000		11,000	31,500	8,900
Outlay above Transferred to Fixed Asset Accounts	590,000		240,000	70,000	280,000		
Bonds above Retired by General Fund	90,000		20,000		70,000		
Bonds above Retired by Sinking Fund	25,000				25,000		
Total	$4,656,000	$201,000	$574,000	$1,156,000	$2,315,000	$360,000	$50,000
Depreciation Charged to Surplus	$ 140,000		$ 40,000		$ 100,000		
Bonds Issued as above	300,000		50,000		250,000		
Balance at End of Period	4,216,000	$201,000	484,000	$1,156,000	1,965,000	$360,000	$50,000
Total	$4,656,000	$201,000	$574,000	$1,156,000	$2,315,000	$360,000	$50,000

Debits:

1. Excess of outgo over income.
2. Depreciation on fixed assets except utility fixed assets.
3. Bonds issued during the year.

Budget Statements

The status of the budget estimated revenue and appropriation accounts should be reported at frequent intervals during the year and at its close. These reports take substantially the following form:

STATEMENT OF BUDGET ACCOUNTS

REVENUES

Revenues*	Estimated Amount	Realized to Date	Balance to be Realized	Over-realization

STATEMENT OF BUDGET ACCOUNTS

APPROPRIATIONS

Expenditures	Budget Appropriation	Obligated to Date	Unexpended Balance	Overdraft

* And Non-Revenue Receipts.

Indebtedness Statements

In connection with the issuance and sale of municipal bonds the accountant is called upon to prepare statements of indebtedness upon the basis of which is determined the desirability of the bonds as an investment. The statement should cover the elements of credit supporting the bonds, which are as follows:

1. The population and its character.
2. The industries of the municipality and their character.
3. The assessed valuation of property in the municipality. The relationship in terms of a percentage of true value to assessed value should be shown as indicating the extent to which assessments may be increased.
4. Net outstanding indebtedness made up of gross indebtedness less the following:
   (a) Productive debt, i.e., indebtedness incurred for projects which earn at least interest on the indebtedness.
   (b) Sinking funds on hand and invested in securities maturing prior to the issue covered by the statement.
5. Value of property owned. This item is relatively unimportant, since the property is available to pay indebtedness in case of default only to a limited extent.
6. Indebtedness limitation in terms of a percentage of assessed valuation.
7. Tax limitation in terms of a percentage of assessed valuation.

Cost Statements

Cost statements are prepared for the purpose of comparing total and unit costs of construction and operation between periods, methods, and departments. It should be noted that depreciation must be considered to arrive at true costs. The following is a typical example of a cost statement:

Department of the Interior
United States Reclamation Service

Project Monthly Cost Report

Strawberry Valley Project
Feature Driving Strawberry Tunnel Heading 1
Month of January, 1912

Acct. No.	Classification	This Month Amount	This Month Unit Cost	Total to Date Amount	Total to Date Unit Cost
	Labor—				
760	Engineering	$217.80	$0.65	$471.47	$0.56
761	Superintendents	216.66	0.64	621.66	0.74
762	Shift Bosses	418.50	1.25	1,245.50	1.48
763	Timekeepers	85.00	0.25	249.33	0.30
764	Drillmen and Helpers	1,216.50	3.62	3,809.88	4.50
765	Miners	....	.....	....	.....
766	Muckers	1,134.19	3.38	2,802.46	3.32
767	Track and Dumpmen	663.13	1.97	1,867.71	2.21
768	Skinners	255.75	0.76	573.40	0.68
769	Timbermen	627.61	1.87	2,021.16	2.39
770	Miscellaneous	40.25	0.12	334.08	0.40
	Materials—				
771	Powder, Fuse and Caps	795.36	2.36	1,609.43	1.91
772	Lumber	357.60	1.06	968.31	1.15
773	Oils, Candles, Etc.	83.33	0.25	298.14	0.35
774	Ventilating Pipe	205.20	0.61	260.17	0.31
775	Track, Including Ties	190.44	0.57	398.91	0.47
776	Pipe (Air Line)	1.32	0.00	130.01	0.15
777	Drill Repairs	97.12	0.29	614.08	0.73
778	Miscellaneous	74.48	0.22	329.69	0.39
779	Machine Shop Expense	224.57	0.67	424.83	0.50
780	Blacksmith Shop Expense	242.45	0.72	634.31	0.75
781	Corral Expense	249.90	0.74	761.04	0.90
782	Power	1,370.02	4.08	2,570.41	3.05
783	Plant Depreciation	628.32	1.87	1,136.32	1.35
	Labor and Material—				
784	Pumping	433.87	1.29	785.87	0.93
785	Electrician and Blowerman	102.75	0.31	256.51	0.30
786	Disabled Employees	....	.....	....	.....
787	Equipment Depreciation	168.00	0.50	341.50	0.40
788	Camp Maintenance Expense	686.76	2.04	1,360.64	1.61
789	General Expense	651.91	1.95	1,781.53	2.12
...	Diamond Fork Road Maintenance	75.35	0.23	157.23	0.19
Total		$11,514.14	$34.27	$28,815.58	$34.14

Work commenced	Percentage complete	Estimated unit total cost	Lowest total bid recd., $......
			Lowest unit bid recd., ...

Class of Work	Unit of Measure	This Month		Total to Date		Remarks
		Quantity	Unit Cost	Quantity	Unit Cost	
Excavat.	Lin. Ft.	336	$34.27	844	$34.14	Materials:.......
....	....	....	......	....	......	Haul:...........
....	....	....	......	....	......	Labor:..........
....	....	....	......	....	......	Equipment:.....
....	....	....	......	....	......	Weather:........
						Miscellaneous:....

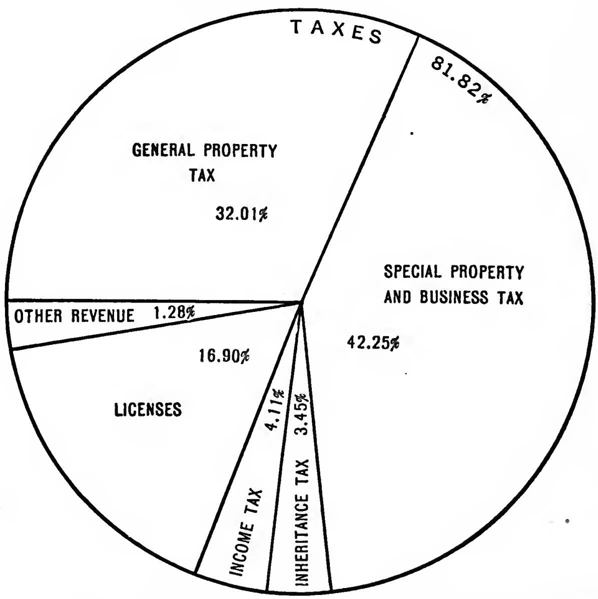
Correct:

Ross Worsley, Bookkeeper.

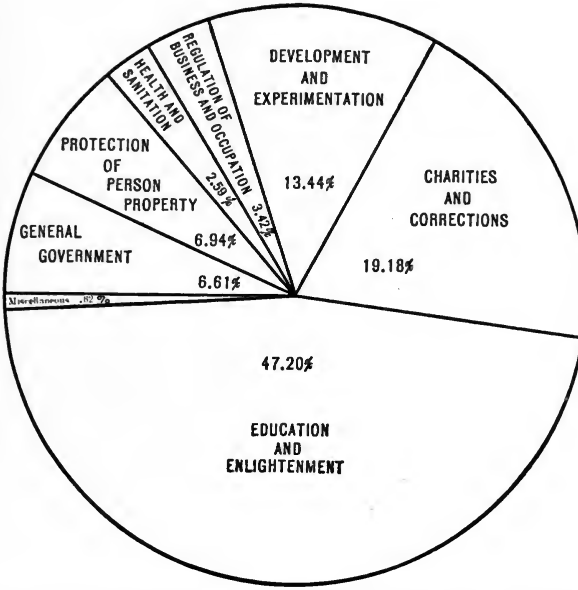
Additional remarks may be written on the back hereof.

Graphic Statements

Graphic representations are particularly valuable in connection with municipal accounts because of the fact that they are more easily understood by citizens who are unfamiliar with the usual accounting statements. They may be made up in a variety of ways to cover various phases of the municipality's finances. Forms 10a and b are typical examples.



Form 10. (a) Chart Showing General Revenue Receipts of the State For Fiscal Year Ending June 30, 19—



Form 10. (*b*) *Chart Showing Disbursements of the State for Current Expense and Outlay For Fiscal Year Ending June 30, 19—*

APPENDIX A

PRACTICE WORK FOR STUDENT—FIRST HALF-YEAR

In order to fix firmly in the student's mind accounting principles and their various applications, it is absolutely essential that adequate practice work be provided. The problems of this appendix are based directly on the principles developed in the text of the chapter bearing the same number as the problem assignment. Thus problem assignment I is based on Chapter I, problem assignment II on Chapter II, etc. It manifestly is not possible to incorporate in a problem all the principles discussed in the text and all accounting features of that particular industry as they are met in practice. The problem method is, however, the nearest approach to actual conditions of practice which has yet been devised. The problems here given will be found to involve the major points discussed and to offer the student a good test of his grasp of the principles that apply.

It is realized that the work of the first half-year, requiring a preparation of both the text and problem assignments, is heavy and will require severe application. The student who has pursued the study of accounting as far as the third year will, however, usually be looking forward to the practice of professional accounting and should be willing to undergo the mental pains necessary to give him a sound basis for his life's work.

I

1. The plant and the general offices of the Wolf-Butler Manufacturing Company are located at Springfield, Mass. Its seven branches are located in the Middle Atlantic and Southern States. The extent of the activities of the business is indicated by the fact that the sales of the company average $15,000,000 a year. The president of the company requests you to make a

survey of its accounting methods for the purpose of making suggestions for improving these methods wherever you think necessary.

Your investigation shows, first, that in the process of expansion during the last ten years no definite effort has been made to adapt the organization or personnel of the accounting department to the increased activities of the business. There is no controller, and the man serving at the head of the accounting department has been promoted from an inferior clerical position in the department. The inefficiency of its methods for collecting information is evidenced by the fact that the records show useless and out-of-date information, while other necessary data are lacking. Finally, with reference to the personnel of the department, you find that the duties of the staff are not clearly defined, and that its members frequently duplicate each other's work.

Your survey leads you to suggest the following improvements:

1. The appointment of a trained executive as controller, who is to be responsible for the accounting and statistical methods and procedures of the company.
2. The appointment of the following assistants to the controller:
   (a) A group of research assistants who will devote their attention to initiating the proper accounting and statistical methods which should be adopted by the department. They are also to supervise the progress of these methods and make suggestions for revisions whenever necessary.
   (b) A general auditor who will be directly responsible for the operations of the accounting department.
   (c) A staff of assistants who will carry on the specific functions of the controller in sales, production, purchasing, and finance departments.
3. The organization of the accounting department into the following sections:
   (a) General Office Accounting
   (b) Branch Accounting
   (c) Cost Accounting
   (d) Tabulating
   (e) Sales Classification and Analysis
   (f) Pay-Roll
   (g) Accounts Receivable
   (h) Accounts Payable
   (i) Billing

4. The maintenance of the branch ledgers at the company's general offices, and records of original entry and of customers, at the branches.

Required: Write a report to the president of the company discussing the general weaknesses in the present organization and methods of the accounting department, and explaining the new organization you recommend. Explain specifically the duties and functions of the controller and his three groups of assistants, as well as the various sections in the accounting departments. Explain the relation of the various sections to each other.

2. The board of directors of the Wolf-Butler Manufacturing Company has approved the recommendations contained in your report. The new organization is to become effective as of June 1. During the month of June the following transactions, among others, took place:

1. Accounts receivable collected by the general office from its own sales $800,000.
2. Factory pay-roll for the month $300,000.
3. Purchases of raw materials by the general office $300,000.
4. Raw materials requisitioned from stock for use in the factory $350,000.
5. Cost of goods transferred from the factory to the finished goods storeroom $900,000.
6. Sales made by the general office as shown by the billings of the billing section $600,000. The billing section prepares invoices in triplicate. One is sent to the customer, one to the tabulating section via sales analysis section, and one to the accounts receivable section.
7. Sales by branches $1,750,000. Customers are invoiced by the branches, goods shipped from branch inventories, and collections made by the branches.
8. Collections on account by the branches $1,450,000. Each branch has a working fund of $15,000, which is replenished by the general office. All collections are deposited to the credit of the general office.
9. Expenses paid by the branches $580,000.
10. Merchandise shipped by the general office to the branches $1,600,000. All merchandise is billed to the branches at cost.
11. Charged to the branches for the month by the general office for interest on investment $18,000.
12. Charged to the branches by the general office for overhead expenses at the general office $17,500.
13. General office expenses $35,000. A voucher record is maintained by the company.
14. Machinery purchased by the general office for the factory $20,000.

15. Additional automobile trucks purchased by the general office for the New York branch $25,300. These are billed to the branch and are to be paid for by it.
16. Accounts payable paid by the general office $400,000 for the preceding period as well as the current.

Required: Explain in writing how each of these transactions will be handled by the Wolf-Butler Manufacturing Company, tracing the transaction from its origin until its effect is shown on the general ledger. In your explanation:

(a) State the section of the accounting department which will first have to deal with it.
(b) State each section which will be affected by it and the manner in which it will be affected.
(c) State each ledger on which the transaction will be shown and show in journal form the entry to be made on the ledger.

Each group of transactions, such as sales, purchases, etc., will be regarded as one transaction for the purpose of this problem.

II

1. Discuss the financial condition of the company submitting the following statement when applying for a loan at its bank:

Quick Assets:	
Cash	$ 20,000.00
Notes Receivable	12,000.00
Accounts Receivable, Less Reserve	70,000.00
Liberty Bonds—Equity	10,000.00
Total Quick Assets	$112,000.00
Current Liabilities:	
Notes Payable	$ 15,000.00
Accounts Payable	15,000.00
Total Current Liabilities	$ 30,000.00
Excess—Quick	$ 82,000.00
Ratio	3.73
Invested, Fixed, and Other Assets:	
Machinery, Equipment, and Fixtures	$ 5,000.00
Supplies, Samples, etc.	1,000.00
Total, Invested, Fixed, and Other Assets	$ 6,000.00

Other Liabilities and Reserves:	
General Reserve	$ 3,000.00
Total Other Liabilities and Reserves	$ 3,000.00
Net Worth:	
Permanent Investment	$ 85,000.00
	$ 85,000.00
Summary:	
Assets:	
Quick	$112,000.00
Invested, Fixed, and Other Assets	6,000.00
Total	$118,000.00
Liabilities, Reserves and Capital:	
Current Liabilities	$ 30,000.00
Reserves	3,000.00
Net Worth	85,000.00
Total	$118,000.00

The following additional information is available:

The business consists of the marketing of dairy farm products on a commission basis. Arrangements are made with a farmer to sell his products upon their delivery to the merchant, who takes no responsibility for the value or condition of the merchandise when not immediately sold. Accordingly, no inventory is usually carried. In fact, an inventory in such an undertaking would raise the suspicion in the mind of one examining the statement that the merchant was dealing for his own account. This is not always looked upon favorably in the case of the commission business, as in most cases the capital invested is not sufficient to carry on operations as principal. A slight reverse in the market would involve the commission merchant if he attempted to do business for his own account with his limited capital.

2. Discuss, from the standpoint of the bank approached for a loan, the financial condition revealed by the following statement:

Quick Assets:	
Cash	$ 150,000.00
Advances on Purchases and Consignments	900,000.00

Merchandise, Less Reserve	750,000.00
Liberty Bonds—Equity	200,000.00
Total Quick Assets	$2,000,000.00
Current Liabilities:	
Notes Payable—Banks	$1,500,000.00
Accounts Payable	15,000.00
Accrued Items	10,000.00
Advances vs. Sales	150,000.00
Reserved for Taxes, etc	75,000.00
Due Allied, Controlled Companies	10,000.00
Total Current Liabilities	$1,760,000.00
Excess—Quick	$ 240,000.00
Ratio	1.14
Invested, Fixed, and Other Assets:	
Investments	$ 5,000.00
Lands, Buildings, Plants	650,000.00
Machinery, Equipment and Fixtures	30,000.00
Trade-Marks, Formulas, Good-Will	50,000.00
Due from Stockholders, Officers and Employees	50,000.00
Deferred Charges	40,000.00
Exchange Membership	40,000.00
Sundry Accounts and Notes Receivable	25,000.00
Total Invested, Fixed, and Other Assets	$ 890,000.00
Other Liabilities and Reserves:	
Real Estate Mortgages, Bonded Debt, etc	$ 150,000.00
Reserve for Depreciation of Plant and Property	10,000.00
Total Other Liabilities and Reserves	$ 160,000.00
Excess—Invested, Fixed, etc	$ 730,000.00
Ratio	5.56
Capital Account:	
Capital Stock—Outstanding	$ 500,000.00
Surplus	175,000.00
Surplus due to Appreciation	295,000.00
Total Capital Account	$ 970,000.00

Summary:	
Assets:	
Quick	$2,000,000.00
Invested, Fixed, and Other	890,000.00
Total	$2,890,000.00
Liabilities, Reserves and Capital:	
Current Liabilities	$1,760,000.00
Other Liabilities and Reserves	160,000.00
Capital Account (Net Worth)	970,000.00
Total	$2,890,000.00
Contingent Liability	$2,000,000.00

This additional information is available:

The company conducts a grain elevator and commission business. The previous year's statement showed the following items:

Merchandise, Less Reserve	$550,000.00
Equity in Elevators	250,000.00
Notes Payable to Banks	500,000.00
Advances on Purchases and Consignments	100,000.00
Decrease in Net Earnings	100,000.00

During the last year $295,000 was added to the asset values of the elevators of the company. The values were considered to be in excess of book figures to this extent. This amount was credited to surplus account, bringing the balance of that account up to $470,000.

Adequacy of the insurance carried must always be considered.

3. Discuss the financial condition revealed by the following statement of a chemical company:

Quick Assets:	
Cash	$ 5,000.00
Accounts Receivable, Less Reserve	30,000.00
Merchandise, Less Reserve	75,000.00
Total Quick Assets	$ 110,000.00
Current Liabilities:	
Notes Payable—Banks	$ 10,000.00
Notes Payable—Others	5,000.00
Accounts Payable	40,000.00
Accrued Items	1,000.00

Due to Allied, Controlled, Affiliated Companies		1,000.00
Dividends Accrued		40,000.00
Total Current Liabilities	$	97,000.00
Excess—Quick	$	13,000.00
Ratio		1.13
Invested, Fixed, and Other Assets:		
Investments	$	50,000.00
Machinery, Equipment and Fixtures		510,000.00
Due from Stockholders, Officers, and Employees		40,000.00
Deferred Charges		5,000.00
Total Invested, Fixed, and Other Assets	$	605,000.00
Other Liabilities and Reserves:		
Real Estate Mortgages, Bonded Debt, etc.	$	10,000.00
Total Other Liabilities and Reserves	$	10,000.00
Capital Account:		
Capital Stock Outstanding	$	1,500,000.00
Deficit		892,000.00
Total Capital Account	$	608,000.00
Summary:		
Assets:		
Quick	$	110,000.00
Invested, Fixed, and Other		605,000.00
Total	$	715,000.00
Liabilities, Reserves, and Capital:		
Current Liabilities	$	97,000.00
Other Liabilities and Reserves		10,000.00
Capital Account (Net Worth)		608,000.00
Total	$	715,000.00

This additional information is available:

The conditions in the chemical and dye industry in recent years have been very poor, some concerns having failed and others being in severe financial difficulties. Merchandise could not be disposed of at prices even considerably less than cost. Consequently, stock either had to be sacrificed or, where

possible, used as collateral upon loans, pending the development of a favorable market.

The $50,000 "Investments" shown above represent the balance of power for control in a $500,000 corporation, with which a large business has been carried on. This company has outstanding bonds in considerable amount, which mature within the next 12 months.

There is no preferred stock, the issue being all of one class.

4. Discuss the financial condition revealed by the following statement of a mercantile and commission business dealing in a basic commodity:

Quick Assets:	
Cash	$ 500,000.00
Notes Receivable	200,000.00
Accounts Receivable	200,000.00
Merchandise	2,000,000.00
Total Quick Assets	$2,900,000.00
Current Liabilities:	
Notes Payable—Banks	$1,500,000.00
Notes Payable—Others	50,000.00
Acceptances Payable	150,000.00
Accounts Payable	150,000.00
Accounts Payable—Consignments	300,000.00
Due to Employees	75,000.00
Reserve for Income Tax	100,000.00
Total Current Liabilities	$2,325,000.00
Excess—Quick	$ 575,000.00
Ratio	1.25
Invested, Fixed, and Other Assets:	
Investments	$ 10,000.00
Machinery, Furniture, Fixtures	35,000.00
Due from Stockholders, Officers, and Employees	65,000.00
Miscellaneous Accounts Receivable	40,000.00
Total Invested, Fixed, and Other Assets	$ 150,000.00
Reserves:	
Reserve for Depreciation of Plant	$ 10,000.00
Total Reserves	$ 10,000.00

Capital Account:	
Capital Stock Outstanding	$ 500,000.00
Surplus	215,000.00
Total Capital Account	$ 715,000.00
Summary:	
Assets:	
Quick	$2,900,000.00
Invested, Fixed, and Other Assets	150,000.00
Total	$3,050,000.00
Liabilities, Reserves, and Capital:	
Current Liabilities	$2,325,000.00
Other Liabilities and Reserves	10,000.00
Capital Account (Net Worth)	715,000.00
	$3,050,000.00

This additional information is available: The nature of the business requires the company practically to finance the producers for a limited period each season. To do this the necessary funds must be borrowed from banks. The above balance sheet is issued about the time when the buying of the commodity by the company ordinarily takes place.

Naturally, the major part of the liabilities would be for purchases and would therefore be included in the current liabilities. The item, Miscellaneous Accounts Receivable, $40,000, has been set up separately under Other Assets, as it represents other than trade accounts. The same procedure was followed with the amount due from stockholders, officers, and employees.

This balance sheet clearly indicates the treatment accorded accounts owing from or to parties interested in the corporation either as owners, managers, or workers. The amount shown as Due to Employees was segregated. Originally in the balance sheet this was included in the total of Accounts Payable.

III

The International Exchange Company is a firm of private bankers transacting a foreign exchange business in New York. The condition of their accounts at the close of business December 30, 19—, is shown by the following list:

Debit Interest and Discount	$ 11,485.60
Due to Foreign Banks and Bankers (Nostro) (Overdraft)	325,640.91
Foreign Specie	2,675.50
Managers' Salaries	15,600.00
Our Acceptances on Hand	83,000.00
Accrued Interest Payable	640.36
Cash	865,450.00
Loss on Reichsmarks	6,413.91
Accrued Interest on Loans Receivable	6,540.50
Long Drafts on Foreign Correspondents	750,890.00
Foreign and Domestic Bills Rediscounted	2,460,094.86
Profit on Sterling Exchange	87,891.30
Commission Account (Commissions Earned)	6,651.37
Due us from Banks and Bankers (Nostro Accounts)	1,436,865.27
Due us from Banks and Bankers (Dollar Accounts)	395,745.30
Due to Customers for Exchange Bought	40,150.16
Commissions, Travelers' Letters of Credit (Earned)	671.10
Commissions, Commercial Letters of Credit (Earned)	42,111.15
Commissions, Dollar Accounts (Earned)	2,816.14
Capital	1,760,930.40
Unpresented Foreign Drafts	48,300.00
Interest on Nostro Accounts (Earned)	3,615.66
Foreign and Domestic Bills Discounted	2,460,094.86
Commercial Letters of Credit Issued (Time and Domestic)	2,260,485.94
Commercial Letters of Credit Issued (Foreign)	1,130,340.16
Commercial Letters of Credit Issued (Foreign Correspondents)	218,899.71
Interest on Dollar Accounts Paid Out	2,140.16
Profit on Money Currency Transactions	1,510.00
Nostro Accounts Interest on Claims Receivable	3,986.45
Dollar Drafts Drawn	36,000.00
Foreign Investments—Securities	765,540.00
Foreign Investments—Time Bills of Exchange	1,060,755.85
Due to Foreign Banks and Bankers—Dollar Accounts	1,461,330.50
Earnings on Foreign Investments	7,816.10
Deposits Reserved Against Bills of Exchange	36,416.93
Deposits Reserved Against Travelers' Letters of Credit	42,502.16
Deposits Reserved Against Commercial Letters of Credit	530,640.20
Commercial Acceptances on Hand at Bank	165,360.58
Bankers' Acceptances on Hand at Bank	251,430.45
Cable Expenses	4,696.70
Office Expenses	58,360.19
Customers' Liability on Acceptances	8,196,854.65
Customers' Liability on Travelers' Letters of Credit	65,879.46
Customers' Liability on Commercial Letters of Credit	3,609,725.81

Earnings on Bullion Trading Account	$ 2,165.14
Liability on Acceptances—Domestic Shipments	1,340,320.76
Liability on Acceptances—Foreign Shipments	5,942,503.21
Liability on Acceptances by Foreign Correspondents	914,030.68
Earnings from Brokerage Transactions	8,740.16
Travelers' Letters of Credit Issued	65,879.46
Advances on Time Bills (made to customers	142,175.67
Profit on Guilders Account	34,638.71
Profit on Francs Exchange Transaction	19,460.15
Travelers' Letters of Credit Checks Outstanding	26,516.89
Credit Interest and Discount	36,950.86
Due us from Customers for Exchange Sold	15,448.62
Gold Shipments	21,325.60

On the last day of the year the following transactions take place:

The firm purchases £50,000, 60-day sterling bills at 3.65½, and transmits them to its London correspondent with instructions to discount them and place the proceeds to the firm's credit. The discount rate prevailing in London is 4½%. A stamp charge of 1/20% is charged by the correspondent.

Cable transfers on London are selling in New York at $3.72, while they are quoted in Paris at 46 francs per pound. Cable transfers on Paris are quoted in New York at 7.76 cents. The firm orders its Paris correspondent to purchase £7,500 and remit them to its London correspondent.

The firm receives for collection from its Brazilian correspondent a 90-day draft amounting to $50,000, drawn by the Brazil Exporting Company, with instructions to discount it and purchase 90-day sterling with the proceeds. The market rate of discount for 90-day bills is 5%, and the rate for 90-day sterling bills is $3.64.

The firm receives 2,500 ounces of gold from its London correspondent to be sold and proceeds credited to the latter's account. The gold is sold at $20.67 per ounce.

Travelers' letters of credit issued during the day amount to £15,000, for which the applicants are charged at the rate of $3.70 plus a commission of 1%.

Travelers' checks sold amount to $2,564.69, with a commission charge of ½%.

90-day sight drafts under commercial letters of credit amounting to $25,650.46 are accepted. These cover domestic shipments.

The banking house is informed by its foreign correspondent that its account is charged for $35,678.95 for acceptances on foreign shipments made by the correspondent for its account.

The house receives $169,755.44 from customers as payment for acceptances under commercial letters of credit.

It issues a letter of credit for $150,000 for importation of products from France, to be availed of by means of 60-day sight drafts accompanied by documents.

A deposit of $60,000 is received from the Commercial Import Company as collateral against drafts to be accepted by the banking house under letters of credit.

The house buys back $175,000 of its own acceptances in the open market to hold them till maturity.

The following expenses are paid: cable expenses $390, office salaries $4,748.50, telephone and telegraph tolls $265.30.

(a) Prepare a trial balance as of December 31, 19—.

(b) Draw up a pro-forma balance sheet and statement of profit and loss as of December 31, 19—, taking cognizance of the following analysis of office expenses as on December 31:

Office Salaries	$50,229.25
Stationery and Printing	1,260.75
Legal Expenses	425.00
Postage	259.94
Telephone and Telegraph	1,785.25
Rent	4,400.00
	$58,360.19

IV

1. Draw up a pro-forma balance sheet, a summary statement of profit and loss, and a statement of cash from the following information:

The condition of the Dollar Savings Bank on December 31, 19—, as shown by the postclosing trial balance, is:

Cash on Hand	$ 603,419.61
Cash on Deposit in Other Banks	2,242,313.08
Banking House	220,000.00
Other Real Estate	29,690.00
Bonds and Mortgages	49,249,235.00
Liberty Bonds	16,817,648.63
Railroad Mortgage Bonds	4,848,781.34
New Mexico State Bonds	2,416,943.05
Utah State Bonds	4,206,310.00
Massachusetts State Bonds	1,934,876.21
Albany Improvement Bonds	3,003,404.06

Boston Bonds	$ 4,268,513.90	
Genesee Township (N. Y.) Bonds	5,112,010.03	
Jackson County (Miss.) School Bonds	1,836,110.00	
Flatbush (N. Y.) Assessment Bonds	3,564,809.91	
Ticonderoga (N. Y.) Bonds	3,682,492.34	
Mansfield (Ohio) Water Works Bonds	634,940.03	
Loans on Pass-Books	1,563,908.09	
Deferred Insurance	6,840.07	
Accrued Interest	845,071.13	
Deposits		$92,292,689.76
Surplus		14,794,626.72
	$107,087,316.48	$107,087,316.48

Six months later the following trial balance is taken from the books before closing:

	Debit	Credit
Cash on Hand	$ 650,004.16	
Cash on Deposit in Other Banks	3,084,455.57	
Banking House	220,000.00	
Other Real Estate	34,160.00	
Bonds and Mortgages	50,788,455.00	
Liberty Bonds	20,578,461.65	
Railroad Mortgage Bonds	4,844,724.41	
New Mexico State Bonds	2,430,819.04	
Utah State Bonds	4,600,347.52	
Massachusetts State Bonds	1,810,775.65	
Albany Improvement Bonds	942,676.76	
Boston Bonds	3,114,411.67	
Genesee Township (N. Y.) Bonds	1,249,773.40	
Jackson County (Miss.) Bonds	2,142,420.21	
Flatbush (N. Y.) Assessment Bonds	2,222,314.19	
Ticonderoga (N. Y.) Bonds	3,168,393.39	
Mansfield (Ohio) Water Works Bonds	3,616,246.81	
Richland County (Ohio) Bonds	1,346,780.95	
Sullivan County (N. Y.) Bonds	3,785,967.96	
Loans on Pass-Books	1,565,818.36	
Deferred Insurance	8,923.31	
Deposits		$96,239,659.62
Surplus		14,794,626.72
Interest on Stocks and Bonds		593,416.23
Interest on Bonds and Mortgages		703,409.91
Interest on Deposits in Other Banks		73,101.01
Rent from Other Real Estate		3,620.17

	Debit	Credit
Petty Expenses	6,009.01	
Stationery and Postage	1,718.19	
Advertising	3,420.90	
Fuel and Light	2,840.00	
Lunches	7,609.31	
Telephone	2,109.62	
Repairs	1,894.84	
Funding Committee	1,263.42	
Salaries	93,084.00	
Taxes	2,843.33	
State Banking Department	2,167.19	
American Bankers' Association Dues	75.00	
Cash Short and Over		71.20
Franchise Tax	76,940.04	
	$112,407,904.86	$112,407,904.86

There is also accrued interest of $410,000 on stocks and bonds, $655,643.18 on bonds and mortgages, and $18,000 on deposits in other banks. A dividend at the rate of 4%, amounting to $1,610,608.37 is due depositors. In accordance with the official valuation list, the bank's securities at this time are worth $57,233,667 (Liberty bonds valued at par), and their par value is seen from the bank's books to be $52,809,000. Amortization on bond premiums is $69,701.12; on bond discounts $4,819.81. There are accrued taxes of $60,000.

2. $100,000 Richland County School District #3 Bonds, 3%, interest payable April 1 and October 1, are bought at a price to yield 4%. The bonds have 3 years (six interest periods) to run. Set up the accounts to show cost, interest, and amortization. [$1.02^6 = 1.12616242$.]

3. Ulster Township 5% bonds, interest payable June 15 and December 15, are bought to yield 6%. Par of bonds is $30,000. The bonds have 2 years (four periods) still to run. Set up the accounts to show cost, interest, and amortization. [$1.03^4 = 1.12550881$.]

V

1. From the trial balance of December 31, 1920, on pages 181 and 182 and the journal entries for the month of January, 1921, on pages 182–192, set up general ledger accounts, and devise a form of subsidiary record in which to record the detail of general ledger revenue and expense controlling accounts given in the entries; post all entries showing results in agreement with trial balance as of January 31, 1921, and cost and income statements for January.

2. Prepare balance sheet, arranged according to good practice, from trial balance as of January 31, 1921.

It should be noted that from the trial balance of January 31, 1921, detail of assets, liabilities, and reserves of collateral operations is not obtainable. In practice such information is available and the published balance sheet is in the nature of a consolidated balance sheet of all departments with inter-company items eliminated. In your balance sheet show such items as are given in the information among the assets under the headings of "Investment in Collateral Operations" and "Accounts Due from Collateral Operations." Assume nothing owing to collateral operations by the main operating department.

3. Submit comments concerning any three items reflected in the balance sheet.

4. From information shown in Entry No. 11 (page 188) and in trial balances, determine original estimated number of tons of recoverable coal from coal lands owned in fee.

5. Assuming that Account 1, Development, includes development costs on both owned and leased lands, that no attempt was made to separate such costs applicable to the respective lands, and that as of January 1, 1921, it was estimated that 1,000,000 tons of coal in leased lands and all of the originally estimated recoverable content remaining in owned lands would be recovered through such development, what was the amount in the account January 1, 1921? (No cost incurred in the acquisition of the lease.)

6. What were the net investments shown by the books in Mine Structures and in Mine Equipment accounts as of December 31, 1920?

VI

1. A small gold mining company with authorized capital stock of $100,000, divided into 100,000 shares of $1 par value each, fully paid and non-assessable, commences operations early in January, 1921. The company takes over by negotiation a partially developed mining property and its equipment on the following terms: $90,000 for the property itself and $10,000 for the plant and equipment, payable in shares of the new company at par, the vendors agreeing to donate back to the treasury of the new company 25,000 of the shares.

The new company purchases some additional nearby claims, increases the plant and equipment, and at once begins underground development, which results later in the year in a body of commercially profitable ore being opened. Ore shipments to the smelters begin in the summer and continue the balance of the year. Production reaches a total of 1,000 tons.

On May 1, the company sells a block of its treasury stock at a discount of 10%. By action of all the stockholders, the sale agreement stipulates that the purchasers are guaranteed an annual return of at least 7% for a period of two years from the date of purchase.

In October the company leases a portion of its underground workings removed from the place of its principal operations upon a royalty basis of 15% of the net smelter returns.

The following trial balance at the close of the fiscal year is taken from the books at the general office after some of the adjusting entries are made:

TRIAL BALANCE OF A B C MINING COMPANY AT DECEMBER 31, 1921

		Debit	Credit
Mining Property		$94,500.00	
Plant and Equipment:			
Boilers, etc.	$5,500.80		
Power Plant	6,617.70		
Blacksmith and Machine Shop	1,000.80		
Hoisting Engine	1,000.00		
Mine Tools and Implements	980.90	15,100.20	
Construction in Progress		1,811.63	
Materials and Supplies		1,589.14	
Mined Ore on Hand		300.00	
Bills Receivable		449.50	
Accounts Receivable		1,066.50	
Deferred Charges:			
Mine Development	$5,985.62		
Miscellaneous Maintenance	211.08		
General Mine Overhead Expenses	2,411.17		
Organization Expenses	345.20		
General Office Expenses:			
Administrative Salaries	4,200.00		
Clerical Salaries	1,850.00		
Office Supplies and Expenses	635.12		
Stationery and Printing	225.80		
Employees' Liability Insurance	385.00		
Fire Insurance	269.15		
Property Taxes	189.38		
Interest Allowed	38.30		
Traveling Expenses	439.50	17,185.32	
Suspense		160.00	
Mine Office Cash		310.86	

		Debit	Credit
Banks:			
Caledonia Trust Company..........	$6,118.37		
First National Bank..............	3,963.42	$ 10,081.79	
Cash....................................		126.25	
Pay Checks...............................			$ 2,411.25
Vouchers Payable.........................			3,563.10
Dividends................................		2,500.00	
Capital Stock, par.......................			100,000.00
Treasury Stock, par......................		20,000.00	
Surplus from Donated Stock...............			24,500.00
Operating Expenses:			
Ore-Breaking.....................	$ 8,495.60		
Transportation Mine to Railroad....	700.90		
Shipping and Selling...............	3,181.45		
Deferred Charges...................	1,500.00		
General Mine Overhead............	2,250.00		
General Office Expenses:			
Administrative Salaries............	2,200.00		
Clerical Salaries..................	875.00		
Employees' Liability Insurance......	280.00		
Fire Insurance.....................	102.50		
Property Taxes.....................	180.25		
Traveling Expense..................	250.00	20,015.70	
Income:			
Ore Production, gross.............	$54,372.29		
Rentals..........................	306.75		
Interest Earned..................	14.50		
Miscellaneous Income.............	29.00		54,722.54
		$185,196.89	$185,196.89

The following information becomes available from the report of the mine superintendent received soon after the close of the year.

The inventories at December 31, after allowing for depreciation, are:

Plant and Equipment:	
Boilers, etc..	$5,050.10
Power Plant...	5,955.93
Blacksmith Shop and Machine Shop......................	850.68
Hoist and Engine Equipment............................	900.00
Mine Tools and Implements.............................	784.72
Materials and Supplies in Warehouse......................	1,550.79

Mined Ore on Hand, 100 tons of an assay value of $45.50 per ton. Cost of breaking the ore down and handling is $3 per ton.

Ore in Transit to Smelters, 50 tons, which are expected to net $21.33 per ton, this estimate being based on an assay made prior to its shipment.

On December 28 the leasors have shipped to the Globe Smelters 20 tons of ore of an estimated net value of $25 per ton after allowing for treatment and freight charges. This shipment is not settled for at time of closing December 31.

As the basis for the depletion charge, the mine superintendent estimates the recoverable ore at 100,000 tons.

Smelter deductions, covering freight and charges, as shown by the settlement sheets, amount to $3,103.48.

The difference between the physical and book inventories of materials and supplies is to be charged to Mine Development.

The directors meet on December 31, and declare a dividend of $2,500 covering the disbursement already made. They order that a reserve of $4,000 be set aside to cover taxes.

From the above information:

(a) Prepare the necessary journal entries to record in the books such data as are not shown in the trial balance submitted, including closing entries.

(b) Prepare balance sheet and profit and loss statement to show the year's operations.

(c) Submit a postclosing trial balance.

2. The information below relating to mining costs is taken from the mine records of the El Doro Mining Company:

	Total	Ore-Breaking	Development	General Mine Expense	Power Plant	Hoisting	Pumping
Superintendence and Foremen	$ 10,751.50			$ 10,751.50			
Shift Bosses	19,879.68	$ 18,859.93	$ 980.75	39.00			
Machinemen	78,991.81	73,660.51	5,331.30				
Chuck Tenders	37,506.80	33,709.75	3,797.05				
Miners	91,144.78	89,996.28	1,114.75	33.75			
Shovelers	168,285.92	160,977.17	7,308.75				
Carmen	16,144.74	16,111.24	33.50				
Motormen	11,430.25	11,412.25	18.00				
Timberman and Carpenters	71,660.08	64,721.88	1,575.79	5,362.41			
Hoistmen and Skipmen	17,843.05					$17,843.05	
Pumpmen	4,859.50						$4,859.50
Pipemen	1,587.15			1,587.15			
Nippers	4,856.50	4,856.50					
Supplymen	19,847.70	16,124.60		3,723.10			
Repairmen	4,488.04			4,488.04			
Timekeeper	1,676.50			1,676.50			
Contractors	1,119.00		1,119.00				
Concretemen	4,055.11			4,055.11			
Miscellaneous Labor	1,605.78			1,605.78			
Powder	51,041.10	43,239.20	7,685.30	116.60			
Fuse Caps	9,668.04	8,666.89	987.65	13.50			
Illuminants	3,911.50	3,694.89	157.37	59.24			
Lubricants	1,061.96	591.48	3.90	73.68		315.11	77.79
Timber and Logging	108,005.75	104,734.23	1,769.40	1,489.90		12.22	
Miscellaneous Supplies	48,669.48	32,609.60	3,318.19	7,249.83		4,595.45	896.41
Cement	2,661.55			2,661.55			
Machine Shop Repairs	19,217.99	11,973.47	717.90	3,216.50		1,857.87	1,452.25
Electrical Repairs	7,860.17	4,658.49	2.30	2,089.51		697.15	412.72
Building Repairs	3,988.02			3,988.02			
Tool Shop Repairs	6,956.59	4,644.53	250.48	2,061.58			

	Total	Ore-Breaking	Development	General Mine Expense	Power Pant	Hoisting	Pumping
Electric Power	$11,658.30				$11,658.30		
Compressed Air	40,929.81	$38,504.13	$2,425.68				
Electric Light	166.40				166.40		
Heating	6,657.80				6,657.80		
Surveying	8,711.36	2,661.15	357.00	$5,693.21			
Train Service	7,217.52			7,217.52			
Teaming	175.26			175.26			
Tramming Ore	24,711.04						
Tramming Men into Mine	1,440.60						
Tramming Supplies into Mine	1,938.66						
Contingent Expense	22,077.27			22,077.27			
Legal Services	15,274.70			15,274.70			
Depreciation	40,521.31			40,521.31			
Administrative Expense	38,772.11			38,772.11			
Fire, Light, Water, and Rent	632.85			632.85			
Taxes and Insurance	58,326.05			58,326.05			
Fire Protection	91.99			91.99			
Litigation and Other Extraordinary Expenses	14,694.03			14,694.03			
Total	$1,124,773.10	$746,408.17	$38,954.06	$259,818.55	$18,482.50	$25,320.85	$7,698.67

Prepare a cost sheet, grouping the data under these three main heads: Ore-Breaking, Mine Development, and General Mine Expenses. Under each one of these main heads group the items under the following classes: Labor; Supplies; Explosives; Repairs; Light, Heat, and Power; Air; Engineering and Surveying; and Administrative Expense. Show a subtotal for each class.

The following distributions are to be made:

(a) Power Plant Expenses:

To Ore-Breaking	$ 777.89	
Hoisting	3,170.04	
Pumping	7,657.57	
General Mine Expense	6,877.00	$18,482.50

(b) Sundry Expenses:

Expense	To Ore-Breaking	To Mine Development
Tramming	75%	25%
Hoisting	67	33
Pumping	55	45

The ore mined during the year amounts to 475,000 tons.

Drifts, raises, cross-cuts and shafts to the extent of 3,944 feet, have been driven during the year.

On the cost sheet show also the cost per ton of each "class" of expense for ore-breaking and general mine expenses, and the cost per foot of each "class" for mine development.

VII

The following trial balance is taken from the general ledger of the Meadow Grove Land and Live Stock Company for the year ending March 31, 1921:

Alfalfa Hay (Inventory)	$ 575.00	
Accounts Receivable	1,414.80	
Accounts Payable		$ 225.18
Allowance for Bad Accounts and Notes		120.00
Alfalfa Hay Sold		822.46
Alfalfa Hay Expense	1,250.00	
Beans (Inventory at beginning)	15.85	
Breaking Ground	966.14	
Bonds (Due January 1, 1925) Authorized		50,000.00
Bonds Unissued	30,000.00	
Barns	3,562.80	
Cattle Sheds	1,255.73	

Cattle Corrals	417.70	
Clearing Ground	774.50	
Cattle (Inventory)	25,925.00	
Chickens (Inventory)	100.00	
Corn (Inventory)	721.21	
Contract for Purchase of State Land		3,100.00
Cattle Purchased	1,500.00	
Chickens Purchased	15.60	
Cattle Sold		15,871.64
Chickens Sold		33.10
Corn Sold		1,023.09
Cash	895.97	
Cook	360.00	
Capital Stock Authorized		200,000.00
Capital Stock Unissued	50,000.00	
Capital Stock Treasury	35,000.00	
Chicken Expense	16.08	
Cattle Expense	1,235.00	
Corn Expense	937.00	
Coal	113.00	
Dehorning Chute	179.00	
Depreciation Accrued—Barns		309.25
Depreciation Accrued—Cattle Sheds		89.70
Depreciation Accrued—Cattle Corrals		83.16
Depreciation Accrued—Dehorning Chutes		34.00
Depreciation Accrued—Flumes and Pipelines		1,168.00
Depreciation Accrued—Garden Equipment		14.00
Depreciation Accrued—Grain Equipment		150.88
Depreciation Accrued—General Equipment		34.60
Depreciation Accrued—Hay Equipment		68.40
Depreciation Accrued—Horse Equipment		130.45
Depreciation Accrued—House Equipment		162.00
Depreciation Accrued—Houses		252.02
Depreciation Accrued—Hog Houses		15.00
Depreciation Accrued—Hay Racks		51.19
Depreciation Accrued—Irrigating Equipment		24.48
Depreciation Accrued—Poultry Houses		18.86
Depreciation Accrued—Plow and Harrow Equipment		81.20
Depreciation Accrued—Telephone Lines		34.80
Depreciation Accrued—Fences		280.00
Eggs Sold		52.91
Fences	2,692.14	
Flumes and Pipelines	5,879.21	
Fence Posts (Inventory)	45.80	

General Equipment Cost	183.11	
Garden Produce Sold		52.28
Garden Equipment Cost	78.50	
Grain Equipment Cost	525.52	
Garden Expense	43.70	
Groceries	636.71	
Houses	5,783.92	
Horse Hire		15.00
Hog Houses	75.00	
Hay Racks	125.25	
Hay Equipment Cost	347.33	
Horse Equipment Cost	657.00	
Hogs (Inventory)	475.00	
House Equipment Cost	536.73	
Horses Sold		165.00
Hog Expense	51.15	
Horse Expense	112.50	
Horses Purchased	300.00	
Hogs Sold		317.90
Horses (Inventory)	1,805.00	
Irrigation Expense	525.00	
Income from Breeding		159.95
Insurance Premiums	105.50	
Irrigating Equipment	122.44	
Interest Received		80.00
Interest Paid	60.00	
Land	100,000.00	
Manager's Salary	1,800.00	
Meat Purchased	23.60	
Notes Payable		1,000.00
Notes Receivable	1,500.00	
Oats (Inventory)	802.56	
Oats Purchased	102.00	
Oats Sold		1,207.10
Oats Expense	92.00	
Poultry Houses	321.62	
Profit and Loss		1,776.50
Potatoes (Inventory)	26.73	
Pumpkins	17.60	
Pasturage		105.00
Plow and Harrow Equipment Cost	398.47	
Repairs—Flumes and Pipelines	48.00	
Repairs—Fences	82.20	
Repairs—Parts for Hay Machinery (Inventory)	24.90	

Repairs—Cattle Sheds	5.50	
Repairs—Barns	6.00	
Repairs—Hay Machinery	48.75	
Repairs—Grain Equipment	18.42	
Repairs—Plows and Harrows	31.20	
Surplus beginning of year		7,361.63
Seeding to Perennial Crops	631.87	
Sheep Sheds	15.00	
Straw Expense	2.50	
Surplus Adjustments	79.82	
Sacks	573.00	
Straw (Inventory beginning of year)	10.00	
Turnips (Inventory beginning of year)	19.70	
Telephone Lines	1,162.40	
Wild Hay (Inventory beginning of year)	200.00	
Wild Hay Expense	50.00	
	$286,490.73	$286,490.73

Additional data available and to be taken into consideration at the end of the fiscal year are:

1. The consumption record shows the following; the prices are the average market prices:

Cattle:				
5 head butchered	at	$70.00	per	head
Hogs:				
12 head butchered	"	25.00	"	"
Chickens and Eggs:				
50 head eaten	"	1.00	"	"
150 doz. eggs used	"	.50	"	doz.
Oats:				
500 cwt. fed to horses	"	2.00	"	cwt.
5 " " " chickens	"	2.00	"	"
Corn:				
50 cwt. fed to horses	"	1.20	"	"
1,000 " " " cattle	"	1.20	"	"
3 " " " chickens	"	1.20	"	"
20 " " " hogs	"	1.20	"	"
Alfalfa Hay:				
15 tons fed to horses	"	15.00	"	ton
700 " " " cattle	"	15.00	"	"
Wild Hay:				
14 tons fed to horses	"	20.00	"	"
25 " " " cattle	"	20.00	"	"

Straw:

25 tons fed to cattle.................at $2.00 per head

It costs 10% of the market value to market the above products.

2. The following discrepancies are found in the amount of produce accounted for:

Oats unaccounted for	32 cwt.
Corn unaccounted for	56 "
Wild Hay unaccounted for	2 tons
Alfalfa Hay overaccounted for	12 "

3. Closing inventories are as follows:

Cattle	550 head		$45,800.00
Hogs	18 "		450.00
Horses	17 "		1,950.00
Potatoes	19.1 cwt.	at $ 2.00	38.20
Oats	700 "	" 1.50	1,050.00
Corn	3,000 "	" 1.00	3,000.00
Alfalfa Hay	100 tons	" 12.00	1,200.00
Groceries			28.56
Coal			16.00
Fence Posts			21.70
Repair Parts for Hay Machinery			17.23
Sacks			122.00

Fence posts have all been charged to Repairs—Fences, and repair parts for nay machinery have been charged to Repairs—Hay Equipment.

4. Horse manure was used as fertilizer as follows:

Garden	4 tons
Oats	35 "
Corn	50 "

Cattle manure was used as fertilizer as follows:

Garden	2 tons
Oats	75 "
Corn	90 "

(Figure the above at $1 per ton.)

5. The income from breeding is analyzed as follows:

Horses	$44.95
Cattle	95.00
Hogs	20.00

6. All sacks were used for oats.

7. The labor record shows the following summary:

	Man-Days	Horse-Days
Repairing Fences	6	8
Repairing Houses	3	1

	Man-days	Horse-days
Repairing Barns	2	1
Repairing Cattle Sheds	2	0
Building Sheep Sheds	5	1
Repairing Flumes and Pipelines	16	8
Repairing Hay Equipment	4	0
Cattle	401	602
Hogs	17	2
Horses	127	54
Garden	46	32
Oats	223	503
Corn	283	460
Alfalfa Hay	418	703
Wild Hay	18	30
Straw	1	1
Groceries	9	18
Coal	6	12
Butchering Cattle	10	10
Butchering Hogs	12	12
Irrigating	191	105
	1,800	2,563

(See Instructions Nos. 5 and 6 below.)

8. Cost of board per man-day was 50 cents the preceding year.
9. Depreciation is estimated at following rates, based upon cost per trial balance:

Houses (dwellings) and Telephone Lines	4%
Barns	5
Corrals	15
Dehorning Chutes	20
Hay Racks	30
All other assets	10

10. The acreage record shows the following:

	Acres
Oats	150
Corn	180
Alfalfa (all sowed in previous years)	200
Garden	2
Total in cultivation	532
Wild Hay	40
Pasture	1,338
Waste	50

	Acres
Irrigation System	30
Building Sites and Roads	10
Total	2,000

11. The cost of irrigation for the preceding year was $2 per acre.
12. The following expenditures have been made on behalf of next year's crops:

Garden	$15.30
Corn	87.00

13. Hay was harvested as follows:

Alfalfa	826 tons
Wild Hay	31 "

14. Grain was harvested as follows:

Oats	1,422 cwt.
Corn	4,595.2 "

15. All cultivated crops were irrigated.
16. $50 of the insurance premiums was unexpired.
17. The repairs to flumes and pipelines represent the cost of installing a small siphon at a certain point on the irrigating canal, where a new line of the Union Pacific Railroad has crossed. The railroad company is to pay for any expenses incurred.
18. Repairs to barns represent repairs of a section of the barns used exclusively for cattle.
19. Accrued taxes are estimated as follows:

General	$1,265.00
Federal	6,735.00

20. An analysis of the balance of $1,776.50 to the credit of the Profit and Loss account in the trial balance shows it to be made up of the following:

Profit on sale of a house in the city	$1,850.00
Expenses on the city property	73.50
Net profit	$1,776.50

21. Inventories at the beginning of the year represented quantities as follows:

Corn	480.8 cwt.
Oats	422.0 "
Alfalfa Hay	38.0 tons
Wild Hay	10.0 "
Cattle	432.0 head
Hogs	28.0 "

22. Quantities of produce and live stock sold were as follows:

Corn	947 cwt.
Oats	671 "
Alfalfa Hay	61 tons
Cattle	167 head
Hogs	9 "

23. Quantities of produce and live stock purchased were as follows:

Oats	64 cwt.
Cattle	22 head

24. Live stock lost from death:

Cattle	13 head
Hogs	2 "

25. An average of 30 head of live stock was pastured for others.

26. There were 12 work horses at the end of the year, including draft and saddle horses, and there were no changes in numbers of horses during the year. They were used as follows:

1920	No. of Days	No. Horses Used
April	2	None
	3	5
	12	8
	8	9
	5	11
May	1	None
	2	1
	2	2
	6	6
	10	9
	5	10
	4	11
	1	12
June	4	2
	2	3
	1	6
	10	7
	1	8
	12	10
July	3	3
	5	4
	9	5
	14	8

1920	No. of Days	No. Horses Used
August	1	None
	4	4
	2	7
	2	9
	22	10
September	4	2
	14	8
	7	9
	5	10
October	1	None
	3	1
	8	5
	6	6
	5	7
	8	9
November	2	3
	4	6
	11	7
	3	8
	10	10
December	1	None
	2	1
	2	2
	7	4
	7	7
	12	10
1921		
January	1	None
	3	1
	6	3
	9	4
	3	6
	8	9
February	3	1
	6	3
	10	7
	8	9
March	2	None
	3	2
	5	7
	7	9
	4	10
	10	11

27. An analysis of corn expense as shown in the trial balance shows the following:

Seed	$ 50.00
Labor	800.00
Expenses on next year's crop	87.00
Total Trial Balance	$937.00

(a) Write the adjusting and closing journal entries, being careful to allocate properly to the several farm operations all expenses that can be so distributed. Follow the order of the entries shown in the text.

(b) Make up the following statements and schedules, in accordance with the forms shown in the text:

1. Balance sheet
2. Profit and loss statement
3. Analysis of produce accounts
4. Analysis of live stock accounts
5. Comparative statistics. (Make entries for year ended March 31, 1921 only.)
6. Analysis of cost of production.
7. Analysis of horse-days worked. (Show cost of keeping horses not worked, for the year only, not by months.)

Instructions

1. Charge cattle consumed to Beef Butchered; hogs to Hogs Butchered, and chickens and eggs to Poultry and Eggs.
2. In determining ratios, drop fractions of less than ½%, and add 1% for fractions of ½ or more than ½.
3. Distribute depreciation hay racks and corrals: cattle, 80%, horses, 20%.
4. Charge interest on investment at rate of 8%. In the absence of the balance sheet at the beginning of the year (see explanation under entry 18, page 257), use as a basis the book values shown in the pre-closing trial balance.

   Distribute interest on pasturage and on the hay racks to the different classes of live stock in proportion to number of head per closing inventory.

   Charge interest on grain equipment to General Grain Expense.

   Charge interest on clearing and breaking ground to cultivated crop in proportion to acreage.

   Charge interest on plowing and harrowing equipment and on irrigating

assets, to Plowing and Harrowing Expense and Irrigation Expense.

Charge interest on all assets used directly in connection with the several farm operations to those respective expense accounts, e.g., Cattle, Oats, Garden, etc.

Charge all other interest to General Farm Expense.

In order to charge interest on the entire investment, the sum of the assets on which interest has already been figured should be deducted from the total assets employed in the business and interest on the difference charged to General Farm Expense. In the absence of the balance sheet, arbitrarily assume the difference to be $5,000 at the beginning of the year.

5. In distributing horse expense (see journal entry 20, page 258), the number of horse-days devoted to horses should be deducted from the total, since Horse Expense account will be closed by this entry and the deduction of this item from the total will have the effect of charging it ratably to other activities in which horses were used. In order to simplify the calculation, distribute horse expense as if it were even $2,905.00. Adjust difference of 24¢ arbitrarily in cattle expense.
6. In distributing house expenses (see journal entry 25, page 259), the number of man-days devoted to horses should be deducted from the total, since Horse Expense account has been closed. (See journal entry 20.) The number of man-days devoted to repairing houses, butchering cattle, butchering hogs, and to garden, groceries, and coal, should also be deducted from the total, since these accounts have been closed. (See journal entry 24, page 259.) The deduction of these items will have the effect of charging them ratably to other activities in which labor was used.
7. For simplicity in figuring, use $1.71 per man-hour in journal entry 25, adjusting the difference in Irrigation Expense account.
8. In making journal entry 28, page 260, omit Garden Expense, since this account has been closed.

VIII

1. The following trial balance is taken from the books of the New York Malleable Iron Company as of December 31, 19—:

Land and Buildings	$ 223,288.83
Machinery	129,651.65
Furnaces and Ovens	41,043.41
Patterns	8,189.77
Flasks	3,938.72
Plant Equipment	19,306.45

Office Equipment	6,192.22	
Additions and Betterments	1,410.42	
Cash in Bank	43,368.38	
Cashier's Working Fund	800.00	
Accounts Receivable	279,622.54	
Notes Receivable	1,973.79	
Malleables on Hand and in Process, Inventory Dec. 31, 19—	44,600.50	
Investments	50,000.00	
Supplies Unused in Plant, Inventory Dec. 31, 19—	4,001.12	
Stores General	64,788.93	
Stores Metals	68,788.53	
Annealing Pots and Bottoms	11,489.32	
Grate Bars and Miscellaneous	6,959.49	
Fuel	37,693.02	
Sand, Brick, Clay	11,961.02	
Metal Used	27,088.10	
Melting	108,352.33	
Molding	118,918.07	
Cores	30,564.68	
Hard Iron Cleaning and Trimming	15,651.22	
Annealing	29,920.85	
Soft Iron Cleaning	5,317.40	
Fitting, Assembling, and Shipping	12,048.58	
Special Pattern and Flask Expense	800.74	
Repairs and Maintenance	7,263.72	
Miscellaneous Shop Expense	12,225.33	
Returned Malleables	6,097.26	
Freight on Returned Malleables	419.38	
Salaries of Salesmen	13,653.84	
Selling Expense	1,011.74	
Stationery, Printing, Advertising	1,135.27	
Interest and Exchange	1,312.17	
Telephone and Telegraph	359.28	
Insurance, Taxes, etc	7,723.00	
Income Tax	18,000.00	
Miscellaneous Office Expense	11,968.54	
Legal Expense	1,018.78	
Fire Loss	5,652.00	
Capital Stock		$ 300,000.00
Surplus		331,453.43
Reserve for Depreciation		91,915.57
Reserve Income Tax and Contingencies		21,363.94

Reserve Doubtful Accounts		8,841.67
Vouchers Payable		26,450.66
Notes Payable		20,000.00
Unclaimed Wages		478.62
Merchandise Sales, Malleables		681,628.86
Interest and Exchange		2,293.72
Miscellaneous Earnings		746.60
Prior Year's Expense		483.07
Purchase Discount		1,289.98
Royalties Received		8,624.27
	$1,495,570.39	$1,495,570.39

In closing the books for the year, the following items are to be taken into consideration:

Inventory of Stores		$57,721.51
Inventory of Metals		67,716.41
Inventory of Unused Supplies charged to departments from stores ledger		4,551.57
Malleables finished and in process		41,578.88
Plant Equipment Charged off		3,612.65
Depreciation		23,877.43
Special Reserves:		
Income Tax and Contingencies		24,000.00
Adjustment Inventory Values		4,085.32
Accrued Items:		
Interest Accrued (Income)		2,437.34
Royalties Earned, Unpaid		3,820.10
Bad Debts' estimate		3,296.23
Pay-Roll Accrued		21,797.85
Distributed as follows:		
Annealing Pots and Bottoms	$ 610.30	
Grate Bars, etc.	55.00	
Melting	1,126.05	
Molding	10,609.43	
Cores	1,583.80	
Hard Iron Trimming	1,540.20	
Annealing	1,930.39	
Soft Iron Cleaning	1,681.90	
Shipping	903.71	
Special Pattern and Flask Expense	568.92	
Repairs and Maintenance	161.97	

General Shop Expense	894.17
Additions and Betterments	132.01

Draw up a pro-forma balance sheet and statement of profit and loss.

2. The classification below of requisitions, expenses, pay-roll, etc., has been prepared from the cost records for the summary of monthly estimated costs of making malleable iron castings. From this information prepare an itemized pro-forma monthly estimated cost statement showing the "cost per 100 lbs. of good castings made" for each general division.

1. Stores requisitions classified:

Supplies and tools issued during month:		
Melting Department	$ 478.62	
Molding Department	1,146.06	
Core Department	160.74	
Hard Iron Cleaning	5.11	
Hard Iron Trimming	5.67	
Annealing Department	328.09	
Soft Iron Cleaning	10.40	
Fitting and Assembling	14.08	
Shipping	14.87	$2,163.64
Fuel issued during month:		
Melting Department	$3,682.84	
Core "	272.83	
Annealing "	1,591.52	$5,547.19
Sand, brick, and clay issued during month:		
Melting Department	$448.54	
Molding "	523.30	
Core "	74.75	
Annealing "	448.54	$1,495.13
Metals issued to melting department:		
Pig Iron	$15,240.92	
Steel Scrap	884.80	
Malleable Scrap	1,562.13	$17,687.85
Annealing pots and bottoms issued		$ 2,512.45

2. Pay-roll distribution, direct and indirect labor:

Melting Department	$ 3,119.94
Molding "	19,054.88

Core Department	4,857.82	
Hard Iron Cleaning	967.29	
Hard Iron Trimming	1,170.86	
Annealing	2,654.56	
Soft Iron Cleaning	406.76	
Fitting and Assembling	785.83	
Shipping	1,387.00	$34,404.94

Repairs and Maintenance }
General Shop Expense } (details with special class)

3. Repairs and maintenance—labor and materials used:

Melting Department	$541.50	
Molding "	541.51	
Core "	54.15	
Hard Iron Cleaning	34.60	
Hard Iron Trimming	38.40	
Annealing	487.35	
Soft Iron Cleaning	54.15	
Shipping	36.10	
Fitting and Assembling	36.10	$1,823.86

4. General shop expense—labor and materials used:

Melting Department	$188.51	
Molding "	348.74	
Core "	75.40	
Hard Iron Cleaning	17.87	
Hard Iron Trimming	19.83	
Annealing	188.51	
Soft Iron Cleaning	47.12	
Fitting and Assembling	18.85	
Shipping	18.85	$923.68

5. Insurance and taxes (1/12 of annual charge)—distributed pro rata as agreed over the departments:

Melting Department	$170.15	
Molding "	437.54	
Core "	85.07	
Hard Iron Cleaning	46.09	
Hard Iron Trimming	51.34	
Annealing Department	243.07	
Soft Iron Cleaning	72.92	
Fitting and Assembling	48.61	
Shipping Department	69.77	$1,224.56

6. Depreciation (1/12 of estimated annual charge)—distributed as agreed pro rata over the departments:

Melting Department	$334.29	
Molding "	859.84	
Core "	167.14	
Hard Iron Cleaning	90.15	
Hard Iron Trimming	100.67	
Annealing Department	477.55	
Soft Iron Cleaning	143.26	
Fitting and Assembling	95.51	
Shipping Department	119.39	$2,387.80

7. Special pattern and flask expense (1/12 of estimated annual cost above income from sales of patterns) $150.

8. Income tax provision (1/12 of estimated annual amount payable for income tax) $3,000.

9. Expense accounts for month:

Salaries	$2,706.73	
Selling Expenses	426.47	
Stationery, Printing, Advertising	141.91	
Telephone and Telegraph	44.91	
Legal Expense	127.35	
Sundry Office Expense	196.07	$3,643.44

10. Inventory:

Estimated malleables finished and in process:

Beginning of month—130 tons estimated average price $93.00
End of the month —120 " " " " 95.00

Additional information:

Good finished castings produced during month	640 tons
Merchandise sales malleables	$107,979.95
Malleables returned during month—defective and otherwise —4.76 tons	$762.15

In grouping these items under their respective departments, the hard iron cleaning department may be separated from or grouped with the hard iron trimming and sorting department, at the option of the student. The fitting and assembling and shipping departments are to be handled similarly.

3. You are required to furnish estimated costs of making malleable iron castings from the following customers' patterns, as given below, submitted on inquiries received today.

(a) Pattern #1, machine molding; 2,000 pieces required; weight 3½ lbs. each; 4 pieces on a gate; weight of gate 11 lbs.; molding direct labor 10 cents per mold; loss bad castings 10%; no cores.

(b) Pattern #2, machine molding, hydraulic test; 4,000 pieces; weight 8.8 lbs. each; 2 pieces on a gate; weight of gate 11 lbs.; molding direct labor 6½ cents per mold; loss bad castings 25%; one core each mold; core-making direct labor, 3 cents per mold.

(c) Pattern #3, machine molding; 1,000 pieces required; weight 40 lbs. each; one on a gate; weight of gate 10 lbs.; molding direct labor 22 cents each; loss bad castings 3%; no cores.

(d) Pattern #4, bench molding; 10,000 pieces required; weight 2.5 ounces each; 24 pieces on a gate; weight of gate 3 lbs.; molding direct labor 7 cents per mold; loss bad castings 20%; special finishing charge for straightening, $1.50 per hundred pounds.

(e) Pattern #5, bench molding; 2,000 pieces required; weight 8 ounces each; 14 pieces on a gate; weight of gate 6 lbs.; molding direct labor 10 cents per mold; loss bad castings 35%; special finishing charge for grinding fins, 25 cents per hundred pieces; one core each piece; core-making direct labor 1 cent each core.

Forms 3 and 4 of the text are to be used as models.
The following general information is available:

Metal cost is to be taken as the average cost obtained in Problem 2.
Average melting loss for the foundry is 10%.
Cost of melting per ton is to be taken from Problem 2.
Loss in bad castings, as given above, was estimated from class costs for each pattern.
Molding and core direct labor charge is given above for each pattern.
Overhead for molding and cores, or ratio of other departmental costs to direct labor cost, is 120% for molding and 110% for cores.
All other expenses per ton of good castings produced are to be taken from Problem 2.
Additional finishing expense for straightening, grinding fins, etc., as given above was estimated for each pattern submitted.

IX

A trial balance taken from the general ledger of the New Penn Construction Company, covering a period of 11 months ending November 30, 19—, shows the following items:

Cash in Banks	$ 30,425.96
Petty Cash Fund	1,100.00

Deposits on Water-Meters, Permits, etc.	150.50	
Notes Receivable	8,500.00	
Accounts Receivable	96,782.71	
Contract Cost Ledger	251,416.53	
Building Materials (Inventory)	8,792.20	
Securities Owned	11,200.00	
Real Estate	45,000.00	
Plant and Equipment	27,500.00	
Furniture and Fixtures	1,325.00	
Notes Payable		$ 55,000.00
Accounts Payable		47,477.55
Amount Requisitioned		190,550.00
Reserve for Depreciation		12,450.00
Reserve for Doubtful Accounts		4,093.88
Capital Stock		100,000.00
Surplus		35,678.81
Reserve for Anticipated Losses		8,000.00
Contract Sales		729,697.82
Cost of Contracts	638,726.69	
Discounts Received		1,070.29
Dividends Received		672.00
New Business Department Expense	7,300.00	
Estimating Department Expense	6,078.00	
Purchasing Department Expense	5,300.00	
Yard Expense	1,456.00	
Stationery and Supplies	1,276.80	
Telephone and Telegraph	728.50	
Officers' Salaries	15,000.00	
Office Salaries	4,550.00	
General Expense	8,250.00	
Taxes	6,822.76	
Rent	3,000.00	
Insurance	338.70	
Interest on Notes Payable	3,670.00	
	$1,184,690.35	$1,184,690.35

The summarized transactions for the month of December comprise: Charges to the contract cost ledger covering purchases of materials, payrolls, etc., amount to $57,892.20. These are distributed as follows: $8,400 to excavation, $9,500 to foundation, $15,000 to steel construction, $10,992.20 to mason work, $5,000 to carpenter work, $5,000 to plumbing and heating, and $4,000 to decorating and painting. Included in this item

of \$57,892.20 are \$12,175.30 representing requisitions by subcontractors against the company.

Transfers of building materials to the yard and warehouse, previously charged to jobs, are \$4,275.

Purchases of equipment amount to \$3,200.

The amount requisitioned by the company against owners is \$68,271.25.

Construction work completed amounts to \$25,475.30 at sales valuation and \$18,625.60 at cost valuation.

General office expenses are distributed as follows:

New Business	\$ 650.00	General Expense	\$ 675.00
Estimating	500.00	Rent	275.00
Purchasing	450.00	Stationery	100.00
Yard Expense	150.00	Telephone and Telegraph	75.00
Officers' Salaries	1,600.00	Bonus to Officers	3,000.00
Office Salaries	400.00	Bonus to Office Employees	300.00

Repairs on work completed last year, with a two-year guaranty, amount to \$1,000.

Several workmen were injured on a job, the cost of which, amounting to \$200, is covered by insurance.

Cash receipts are:

Accounts Receivable	\$118,053.96
Sales of Building Materials	1,200.00

Cash disbursements are:

Accounts Payable	\$75,000.00 gross, from which a discount of \$260 was allowed.
Notes Payable	35,000.00

During the current month the contract for which the reserve for anticipated losses had been provided was completed at an actual profit of \$2,000. The amount of this contract is included in the amount of construction work completed, given above as \$25,475.30.

A bid for \$150,000 is submitted on a fire house for the city, accompanying which is the company's certified check for 5% as a guaranty of good faith.

Included in the amounts requisitioned is an amount of \$27,500, which represents requisitions on 10% cost-plus contracts, it being the practice to include the 10% in the amount requisitioned and to transfer this immediately to Contract Sales.

The accrued depreciation on plant and equipment chargeable to construction work in progress at the end of the year amounts to \$2,000. Depreciation to be charged for idle time of equipment amounts to \$250. Deprecia-

tion on furniture and fixtures amounts to $132.50. Depreciation of real estate at 3% is to be taken into account. Set aside 1% of outstanding notes and accounts receivable as a reserve for doubtful accounts.

Accrued interest on notes receivable is $278.

Prepaid interest on notes payable is $315.

Unexpired insurance is $136.

Accrued office salaries are $175.

Accrued wages chargeable to jobs are $362.

Inventory of stationery and supplies is $300.

Inventory of building materials is $12,567.20.

Set aside a reserve for federal taxes of $5,200.

Take a trial balance for the year ending December 31, 19—.

Draw up a pro-forma balance sheet and statement of profit and loss.

X

The following trial balance as of December 31, 19—, is taken from the general ledger of a company dealing in green and roasted coffee, teas, spices, and extracts. The company also deals in coffee futures, both on its own account and for clients, and through its roasting plant does roasting for the trade.

Cash	$ 9,820.00	
Notes Receivable	4,270.00	
Trade Accounts Receivable	125,116.50	
Reserve for Doubtful Accounts		$ 10,619.84
Roasted Coffee Inventory	80,000.00	
Green Coffee Inventory	296,000.00	
Tea	32,000.00	
Spices and Extracts	11,950.00	
Liberty Bonds	30,000.00	
Miscellaneous Investments	45,000.00	
Deferred Charges to Operation	2,800.00	
Plant and Equipment	360,124.96	
Depreciation Reserve Plant and Equipment		27,900.00
Trade-Marks, Brands, etc	1.00	
Margins with Brokers	8,750.00	
Deposit with New York Coffee & Sugar Clearing Association	15,000.00	
Exchange Membership	9,000.00	
Notes Payable		74,000.00
Accounts Payable		127,260.79
Customers Margin Ledger		15,750.74
Contract Differences	1,375.29	

Mortgage Payable		115,000.00
Capital Stock—Common		300,000.00
Surplus		47,148.10
Dividends	20,000.00	
Roasted Coffee—Sales		675,130.42
Roasted Coffee—Sales Returns and Allowances	18,250.00	
Green Coffee Sales		703,728.98
Green Coffee Sales Returns and Allowances	28,657.96	
Tea Sales		57,303.02
Tea Sales Returns and Allowances	1,500.00	
Spices and Extracts Sales		64,408.74
Spices and Extracts Sales Returns and Allowances	1,000.00	
Green Coffee Purchases	763,153.00	
Green Coffee Purchases Returns and Allowances		6,197.51
Trade Roasting Income		5,732.60
Inward Freight and Cartage	26,740.00	
Brokerage, Insurance, and, Storage	3,440.00	
Miscellaneous Purchasing Expenses	7,320.00	
Tea Purchases	65,225.00	
Tea Purchases Returns and Allowances		200.00
Spices and Extracts Purchases	62,800.00	
Spices and Extracts Purchases Returns and Allowances		150.00
Superintendence Roasting and Packing Department	1,708.92	
Labor	1,690.23	
Power	584.00	
Light and Heat	1,919.90	
Fuel, Roasting	730.00	
Repairs and Maintenance	8,300.85	
Building Expense	225.00	
Insurance	1,847.08	
Sundry Roasting Expense	182.50	
Containers and Supplies	1,023.63	
Salesmen's Salaries and Commissions	47,301.10	
Salesmen's Traveling Expenses	3,753.49	
Advertising	34,204.48	
Delivery Expense	22,520.94	
Miscellaneous Selling Expenses	13,762.80	
Management and Office Salaries	30,735.28	
Office Supplies	4,018.82	
Sundry Office Expense	6,255.82	
Sales Discount	21,269.77	
Purchase Discount		9,258.61

Credit and Collections	7,506.98	
Interest Cost	12,448.83	
Income from Investments		1,958.10
Interest Income		1,040.05
Exchange Profit and Loss		5,343.75
Commissions Earned		2,864.09
Stamp Taxes	751.26	
Interest on Margins		568.75
Interest on Deposit with Association		471.30
	$2,252,035.39	$2,252,035.39

All deferred and accrued items have been brought onto the books.

Distribute In-freight, Brokerage, and Purchase Expenses, 85% to Green Coffee, 12% to Tea, and 3% to Spices and Extracts.

The inventories at the end of the period are:

Green coffee	$206,467.45
Roasted coffee	72,576.26
Teas	25,479.80
Spices and extracts	8,683.50

Not included in the trial balance or in the inventories are the following adjustments which must be given effect:

1. Actual charges on sales invoices covering green coffee are $525.61 more than the pro-forma amounts.
2. Actual credits on purchase invoices covering green coffee are $137.40 less than the pro-forma amounts.
3. Green coffee afloat is $15,769.40, covering which notice of acceptance of drafts by bankers has been received.
4. Green coffee contracted for, of which no notice of shipment has been received, amounts to $10,374.82.
5. Balances of unused letters of credit amount to $12,500

Depreciation of plant and equipment is estimated as 4%.

Set aside ½% of net sales as a reserve for doubtful accounts.

It is decided to write down the exchange membership to $8,000.

A trial balance of the customers margin ledger shows debits of $5,240.16 and credits of $20,990.90.

An analysis of Contract Differences account shows the amount due clients on open options as $743.90, the claims against clients as $1,480.79, the balance representing the results of the company's own operations.

The following distribution of roasting, grinding, and packing expenses is to be made:

Expense Item	Roasting	Grinding and Packing
Superintendence	$1,250.80	$458.12
Labor	1,125.60	564.63
Power	380.40	203.60
Light and Heat	470.00	340.00
Repairs and Maintenance	2,512.14	1,223.24
Building Expense	75.00	50.00
Insurance:		
Normal	583.50	301.81
Extra	500.00	
Depreciation	7,480.20	1,883.05

The records show that 900,000 lbs. of coffee were roasted for the trade and 2,000,000 lbs., costing $392,640.17, were roasted for the company.

It is decided to reserve $50,000 for federal taxes.

Draw up a pro-forma balance sheet and statement of profit and loss with supporting schedules.

XI

The Caswell-Brown Company, Incorporated, operates a store with four departments, all located on the street floor. Departments "B" and "D" occupy the same amount of space and departments A and C twice as much. A new delivery system has been in operation during the year just ended. The expenses of the delivery department have averaged 8.303 cents per package on a total of 76,840 packages, of which 37, 23, 16, and 24% in number have been delivered respectively for departments A, B, C, and D.

The expense for advertising space during the year has amounted to $12,270, covering 1,635,000 lines. The measurements for the departments are:

A	576,000 Lines
B	268,000 "
C	348,000 "
D	384,000 "

The total operating expenses for the year are:

Buying	$17,730.00
Selling	43,340.00
Advertising, space	12,270.00
Advertising, other	7,880.00
Delivery	6,380.00
Rent	15,000.00

Maintenance and Operation of Plant	11,400.00
General and Administrative	7,880.00
Total Operating Expense	$121,880.00

The inventories at selling at the beginning of the year and the percentages of "mark-on" are:

Department		
A	$50,800.00	50%
B	42,500.00	40
C	90,000.00	45
D	28,000.00	55

The net purchases during the year at cost, and the total of the original marked selling prices of these purchases are:

Department	Cost Prices	Original Marked Selling Prices
A	$63,000.00	$125,000.00
B	40,000.00	73,000.00
C	81,000.00	147,000.00
D	41,400.00	93,500.00

The sales, net of returns, the mark-ups, and mark-downs for the year are:

Department	Sales	Mark-Ups	Mark-Downs
A	$109,000.00	$1,200.00	$12,600.00
B	69,000.00	3,500.00	13,700.00
C	143,000.00	none	13,400.00
D	73,000.00	1,400.00	12,500.00

The transfers to and from departments during the year have been:

Department	Transfers from: At Selling	Transfers to: At Cost	Transfers to: At Selling
A	$2,400.00	$1,600.00	$2,800.00
B	1,300.00	500.00	1,000.00
C	3,600.00	1,800.00	3,400.00
D	4,500.00	1,000.00	2,100.00

The difference between the total of the transfers from, and the transfers to, selling departments represents the transfers to expense departments which have been included in the expense amounts mentioned previously.

Prepare a departmental statement of earnings and expenses, giving gross profits by departments, distribution of the expenses to departments as outlined in the text, and net profits by departments. Book inventories are to be used to arrive at the gross profits.

The following information should be submitted supporting the statement of earnings and expenses:

1. Stock account, giving details of book inventory figures.
2. Figures used to prepare mark-ons.
3. Statement of method of distribution of expenses over departments.

Prepare turnover figures for the store as a whole and for the departments.

XII

1. The firm of Smith, Walker, Richard, and Harris, Certified Public Accountants, consists of ten members, four good-will partners and six non-good-will partners. The above-mentioned names represent the good-will partners, who are to receive a salary of $10,000 each. The six non-good-will partners are to receive a salary of $5,000 each. The number of shares, good-will and non-good-will, held by each partner is as follows:

	Good-Will	Non-Good-Will
W. Smith	25	15
H. Walker	25	15
F. Richards	25	15
J. Harris	25	14
S. Newton		8
R. Sanford		8
J. Carlson		7
M. Martin		6
F. Barrows		6
A. Nichols		6

The partnership agreement, under which the firm has been operating, provides that interest on capital, including undrawn profits, at the annual rate of 6%, is to be charged to profits and credited to the accounts of the good-will partners, before profits are divided, and that all salaries to partners are to be deducted before determination of the respective shares of profits. 10% of each non-good-will partner's compensation based on partnership profits over and above salaries is to be retained annually by the partnership for a period of 5 years. The sum so retained is to bear interest at the rate of 6%.

The following is a trial balance taken from the firm's books as of August 31, 19—, covering a period of 5 months:

Cash in Bank	$ 18,425.52
Petty Cash Fund	1,500.00
Accounts Receivable—Clients	35,013.20
Unfinished Engagements	25,653.25

Reserve for Doubtful Accounts		$ 1,174.67
Accounts Receivable—Chicago Branch	28,341.20	
Accounts Receivable—Kansas City Branch	27,541.24	
Accounts Receivable—St. Louis Branch	19,450.47	
Accounts Receivable—San Francisco Branch	32,801.11	
Miscellaneous Accounts Receivable	2,300.00	
Traveling and Subsistence Advances	2,252.25	
Library	3,524.30	
Depreciation Reserve—Library		500.00
Furniture and Fixtures	4,830.50	
Depreciation Reserve—Furniture and Fixtures		500.00
Investments	62,500.00	
Accounts Payable		47,431.20
Non-Good-Will Profits Retained		17,231.40
W. Smith, Capital		30,000.00
W. Smith, Personal		15,625.98
H. Walker, Capital		30,000.00
H. Walker, Personal		14,165.47
F. Richards, Capital		30,000.00
F. Richards, Personal		12,843.25
J. Harris, Capital		30,000.00
J. Harris, Personal		9,499.83
Partners' Salaries	29,166.67	
Audit Fees		158,450.50
Miscellaneous Accounting Fees		17,321.30
Investigation Fees		30,724.20
Cost and Efficiency Fees		45,834.30
Tax Report Fees		39,610.50
Chargeable Salaries	173,679.23	
Salaries—Office Manager and Assistants	9,641.20	
Postage	1,745.24	
Telephone and Telegraph	640.00	
Printing and Stationery	4,738.90	
General Office Expense	2,634.15	
Office Supplies	1,974.84	
Insurance	305.00	
Professional Society and Club Memberships	1,220.00	
Legal Expenses	4,410.20	
Library Expense	178.40	
Unassigned Salaries	8,364.90	
Holiday and Vacation Salaries	8,451.30	
Salaries—Bookkeeping Department	7,320.14	
Salaries—Correspondence Department	2,310.24	
Salaries—General Filing	1,641.30	

Salaries—Librarian	1,231.70	
Report Department General Expenses	1,420.14	
Traveling Expense of Partners	1,474.30	
Office Salaries	1,875.30	
Rent	3,600.00	
Light	240.00	
Income from Investments		4,321.24
Overtime Expense	2,837.65	
	$535,233.84	$535,233.84

During the month of September the following transactions occur:

Voucher Register:	
Staff Accountants' Salaries	$11,850.00
Report Department Salaries	400.00
Partners' Salaries	5,833.33
Traveling and Subsistence Advances	325.60
Office Manager and Assistants	810.50
Office Salaries	225.00
Librarian—Salary	150.00
General Filing—Salaries	125.00
Bookkeeping Department Salaries	1,000.00
Correspondence Department—Salaries	465.00
Rent	300.00
Stationery and Printing	450.65
Light	20.75
Telephone and Telegraph	145.50
Library Expenses	253.75
Office Expenses	585.23
Cash Receipts:	
Accounts Receivable	25,415.62
Income from Investments	525.00
Cash Disbursements:	
Accounts Payable	21,135.06
The Earnings and Expense Journal:	
Earnings Section:	
Audit Fees	23,625.00
Miscellaneous Accounting Fees	2,910.00
Investigation Fees	5,450.00
Cost System and Efficiency Fees	7,213.00
Tax Report Fees	4,350.00
Traveling and Subsistence Advances	2,121.15
Time Analysis Section:	
Chargeable Salaries	9,682.00
Holiday and Vacation Salaries	2,285.00

Research	200.00
Gratuitous Service	83.00

The billing record showed that bills rendered to clients during the month amount to $22,736.85.

The following items are to be considered in closing the books:

Of the unfinished engagements, $10,525.75 represents amount of flat-rate contracts unfinished. Careful estimate of work still to be done indicates that too high a proportion has already been taken into earnings, it being the practice to accrue earnings on flat-rate engagements on the same basis as per diem engagements. It is therefore decided to make the following provision to cover this contingency:

Audit Fees	$6,000.00	
Miscellaneous Accounting Fees	600.00	
Investigation Fees	1,200.00	
Cost and Efficiency Fees	1,800.00	
Tax Report Fees	1,500.00	$11,100.00

The accounts show prepayments of rent $300, professional society memberships $130, and insurance $55. Interest receivable amounts to $975.

The inventory of printing and stationery is valued at $1,428. Depreciation of the library and office furniture and fixtures is to be charged at the rate of 10% per annum.

It is considered doubtful whether 2% of the accounts receivable billed at the main office will be collected.

An analysis of non-good-will profits retained shows the following credits:

S. Newton	$3,362.23	M. Martin	$2,521.66
R. Sanford	3,362.23	F. Barrows	2,521.66
J. Carlson	2,941.96	A. Nichols	2,521.66

The cash unexpended in the hands of staff accountants is $425.

An analysis of flat-rate engagements unfinished at the end of the previous period and completed during the current period shows the following adjustments of earnings to be made between the two periods:

Charges to preceding period:	
Audit Fees	$1,735.20
Miscellaneous Accounting Fees	425.17
Investigation Fees	641.27
Credits to preceding period:	
Cost and Efficiency Fees	895.35
Tax Report Fees	1,021.69

The accounts due from the branch offices after closing show upon analysis to be composed of the following debits and credits:

Cash	$27,610.12	
Accounts Receivable from Clients	59,370.24	
Reserve for Doubtful Accounts		$2,000.00
Work in Progress	20,670.36	
Prepaid Rent	100.00	
Prepaid Insurance	245.20	
Library	4,712.30	
Depreciation Reserve—Library		1,000.00
Furniture and Fixtures	12,871.80	
Depreciation Reserve—Furniture and Fixtures		1,000.00
Accounts Payable		13,446.00

(a) Take off a trial balance September 30 before adjusting the books.

(b) Prepare a consolidated balance sheet and profit and loss statement for the 6 months ending September 30, 19—, taking into consideration the provisions of the partnership agreement.

2. The Arrow Shoe Manufacturing Company requested the firm of Harden, Slate, and Skinner to install a cost system and audit their books. The firm accepted the offer on the following per diem basis:

Senior Accountants	$35 per day of 7 hours
Junior Accountants	20 " " " "
Supervising Senior Accountants	50 " " " "

The firm assigned two seniors and four juniors to the case. The time reports show that they worked 10 weeks.

Auditing Work	4 weeks of 39 hours each
Cost Work	6 " " " "

The supervisor devoted two days each week for the first 8 weeks and one day each during the ninth and tenth weeks, his time during the first four weeks being chargeable against Auditing, the remainder being for cost work.

The firm pays its staff accountants as follows:

Juniors	$1,800 per year
Seniors	3,600 " "
Supervising Seniors	5,000 " "

For costing purposes, the daily salary rate charge is reckoned on the basis of 245 productive days per year.

The accountants assigned to the case were advanced $800 out of the petty cash fund. The following is a summary of their reports of expense chargeable to the case:

Expenses for:	Acct. 1	Acct. 2	Acct. 3	Acct. 4	Acct. 5	Acct. 6	Super.
First week...	$14.53	$15.75	$13.69	$12.98	$13.85	$13.95	$ 7.25
All of Oct...	53.91	53.91	51.64	52.54	51.55	52.50	28.00
" " Nov...	52.65	51.80	51.25	51.65	50.96	51.75	28.07
" " Dec....	20.41	20.12	19.65	19.49	19.99	19.49	13.20

The number of days devoted to the case by the report department was 4, the charge per day being $10 to the client. This is to be charged into costs at $7 per day. The client was also debited with $75 for partner's time, which is to be charged into cost at $40. The report department expenses and partner's time are to be charged equally to Audits and Cost Work.

An additional charge for overhead was taken into the cost records on the basis of an hourly rate, which was determined by dividing the past year's overhead of $44,623.76 by the productive hours for the year, which were 52,000 in number, the productive-labor method being used.

The firm records the income accrued on work at the end of each week.

A bill was rendered the client shortly after the completion of the engagement.

(a) Prepare the cost record for the case.

(b) Make the necessary journal entries to record the entire transaction in the service and expense journal.

(c) Make the necessary journal entries for the billing record.

(d) In each case indicate the controlling account affected.

XIII

1. A trial balance taken from the general ledger of the Lance Advertising Agency for the 11 months ending November 30, 19—, contains the following items:

	Debit	Credit
Accounts Receivable	$54,625.00	
Accounts Receivable—Reserve for Doubtful Accounts.		$ 375.00
Accounts Payable (Trade Creditors)		1,834.00
Advertising Expense	500.00	
Advertising Cost	81,150.00	
Advertising Sales		120,885.00
Auditing	250.00	
Cash on Hand	200.00	
Cash in Bank	13,600.00	
Capital Stock		50,000.00
Collection and Exchange		2,250.00
Commissions Earned		19,800.00
Commissions Paid	4,500.00	

Development and No-Charge Service	2,250.00	
Discounts Allowed	4,860.00	
Discounts Earned		10,800.00
Electric Light	275.00	
Entertaining and Traveling	1,350.00	
General Expense	2,250.00	
Good-Will	10,000.00	
Express and Cartage	125.00	
Furniture and Fixtures	3,250.00	
Furniture and Fixtures—Depreciation Reserve		500.00
Ice and Water	50.00	
Insurance—Fire and Fidelity	25.00	
Interest on Notes Payable	75.00	
Interest on Notes Receivable		100.00
Interest on Bank Balances		200.00
Interest on Liberty Bonds		212.00
Interest on Stocks and Bonds		50.00
Legal Expenses	500.00	
Mail Service	180.00	
Newspaper and Magazine Accounts Payable		16,684.00
Notes Payable		5,000.00
Notes Receivable	1,000.00	
Postage	1,350.00	
Rebates and Allowances	195.00	
Rent	3,600.00	
Repairs to Building	180.00	
Real Estate	12,000.00	
Salaries—Officers	9,000.00	
Salaries—Office	20,000.00	
Stationery and Office Supplies	600.00	
Stocks and Bonds	3,000.00	
Surplus—Balance		10,600.00
Taxes	600.00	
Telephone and Telegraph	250.00	
United States Liberty Bonds	5,000.00	
Writing and Designing	2,500.00	
	$239,290.00	$239,290.00

During the month of December the following vouchers are drawn and paid: Commissions $500, development charges $250, electric light $25, entertaining and traveling expenses $150, general expense $250, mail service $20, postage $150, rent $400, repairs $20, officers' salaries $1,000,

office salaries $2,000, telephone and telegraph $50, writing and designing $1,500.

The following transactions occur during the same month: Payments on newspaper accounts payable amount to $12,500, less discount to the amount of $2,000.

The amount of $17,000, less discounts amounting to $450, is received from customers.

An amount of $200 is realized from the sale of old magazines, papers, etc.

In closing the books at the end of December the following adjustments must be considered:

Advertising cost has been charged from contract records in amount of $3,500. The invoices from the publishers pertaining to this service amount to but $3,000. The difference, viz., $500, is to be paid the following year when the error in invoicing by publishers is discovered.

Advertising cost has been charged with $5,000, representing advance charges on advertising that will not be published until the following year, and no part of which has been charged to the client nor credited to sales.

Included in advertising cost is an amount of $2,000 which covers a charge for advertising the agency.

By the terms of a contract entered into with the Occidental Trading Company, the agency is entitled to 5% of the company's gross sales above $1,000,000. The company's sales for the year amounted to $1,150,000. This has not yet been taken into the books.

Of the development and no-charge service, $500 can be charged to clients.

Writing and designing charges to the amount of $2,000 are to be charged to customers at an advance of 20% to cover overhead, and the balance can be carried as inventory.

Stationery and office supplies on hand amount to $100.

General Expense has been charged with $300 premium for insurance taken out several years ago on the lives of officers for the agency's benefit but not previously booked. The cash surrender value of the policies at December 31 is $3,000. The unexpired portion of the premium amounts to $100.

Fire and fidelity insurance unexpired is $16.67. Rent has been paid one month in advance, $400.

$50 is due a solicitor for commissions which have not been paid.

Collection and Exchange account represents a balance, an analysis of which discloses that $50 was paid to the banks for collection of out-of-town checks and the balance represents the amount earned on foreign exchange.

Interest accrued on Liberty bonds amounts to $13.

Interest accrued and dividends declared on stocks and bonds amount to $25.

Interest on notes payable at 6% is paid 2 months in advance.

Interest accrued on notes receivable amounts to $10.

Real estate consists of land $2,000, and buildings $10,000.

Subscription to United States Liberty bonds was for $8,000, a note having been given at the time. On December 31, $3,000 of this is still unpaid and the bonds to that amount are being held by the bank as collateral. Dividends were paid on the capital stock during the year amounting to 10%.

$600 of the accounts receivable are doubtful of collection. Set up the proper reserve.

Furniture and fixtures have depreciated 5% in value. The depreciation rate for buildings is 2½%, which is considered sufficient to take care of repairs. Set up the proper reserves.

Federal income and excess profits tax for the previous year amounted to $150. This was not considered at that time when the books were closed. It is estimated that this year's tax will amount to $200. Accrued taxes on real estate are $150.

Set up the trial balance in classified form on the working sheet. Make the necessary journal entries to adjust and close the books. Prepare a balance sheet and profit and loss statement.

2. An advertising agency has billed to a client the amount of $13,500, of which $1,500 is for special copy-writing, electrotypes, half-tones, etc. This has been billed at an advance of 20% over the amount at which it was carried on the books while in process. Of the $12,000 charged for advertising space, $8,000 has been placed on a commission basis of 15% and the balance at 10%. The agency has to date paid bills for $10,000, covering these two items of advertising space sold.

Show journal entries necessary to take care of above transactions and ledger accounts affected.

XIV

A trial balance taken from the general ledger of the Penndorf Hotel for the month ending October 31, 19—, is as follows:

Cash in Bank	$46,500.00
Petty Cash	2,500.00
Guests' Cards	3,700.00
Local Accounts	22,100.00
Direct Provisions	4,893.75

Stores Provisions	7,695.49	
Mineral Water	6,595.00	
Supplies	2,100.00	
Liberty Bonds	10,000.00	
House Furniture and Fixtures	165,000.00	
Depreciation Reserve — House Furniture and Fixtures		$ 21,000.00
Kitchen and Restaurant Equipment	30,000.00	
Depreciation Reserve—Kitchen and Restaurant Equipment		3,600.00
Barber Shop Equipment	5,000.00	
Depreciation Reserve—Barber Shop Equipment		600.00
China and Glass	10,000.00	
Depreciation Reserve—China and Glass		1,200.00
Silverware	13 000.00	
Depreciation Reserve—Silverware		4,360.00
Linen	13,230.00	
Depreciation Reserve—Linen		3,360.00
Miscellaneous Equipment	25,625.00	
Depreciation Reserve—Miscellaneous Equipment		11,575.00
Leasehold and Building	1,250,000.00	
Extinction Reserve for Leasehold		675,000.00
Notes Payable		20,000.00
Accounts Payable		37,750.00
Unpaid Expenses		572.00
Deposits Due Guests		825.00
Capital Stock, Preferred		150,000.00
Capital Stock, Common		450 000.00
Surplus		202,188.85
Income from Rooms		35,675.00
Income from Restaurant		75,475.00
Income from Mineral Water		12,400.00
Income from Telephones		1,450.00
Barber Shops and Bootblack Concession		3,200.00
Cab and Taxi Stand Concession		300.00
Cigar and Newsstand Concession		3,400.00
Coat Room Concession		450.00
Kitchen By-Product Sales		150.00
Direct Provisions—Purchases	16,025.39	
Direct Provisions—Purchase Returns and Allowances		1,225.68
Stores Provisions—Purchases	11,538.08	
Stores Provisions—Purchase Returns and Allowances		2,342.59

Laundry	1,500.00	
Light, Heat, and Power	2,500.00	
Insurance	2,400.00	
Building Repairs and Maintenance	3,253.65	
Telephone	1,250.00	
Rent	4,500.00	
Room Expense	20,129.00	
Restaurant Expense	25,571.00	
Mineral Water Expense	3,400.00	
Interest Cost	100.00	
Cash Short and Over	7.50	
Office Salaries	5,000.00	
Advertising	600.00	
Legal Expense	500.00	
General Expense	1,000.00	
License Fees	1,200.00	
Purchase Discount		265.24
Interest Income		49.50
	$1,718,413.86	$1,718,413.86

From the subsidiary records the following analyses are available:

Room Expense:	
Pay-Roll	$10,042.50
House Expense	750.25
House Supplies	1,775.40
Music and Flowers	1,500.00
Repairs and Renewals—Furniture	1,979.50
Repairs and Renewals—Furnishings	2,890.45
Painting and Decorating	1,190.90
Restaurant Expense:	
Pay-Roll—Restaurant	$ 5,474.80
Pay-Roll—Kitchen, etc.	10,946.70
Flowers and Music	4,500.00
Linen and Supplies	550.00
Gas and Fuel	2.135.09
China and Glassware	574.21
Kitchen Expense	940.20
Printing	450.00
Mineral Water Expense:	
Purchases	$2,500.00
Breakage	375.00
Pay-Roll	250.00
Sundry Expense, Supplies, etc.	275.00

Laundry:

Pay-Roll	$899.50
Supplies	479.00
Gas	121.50

The following distribution of overhead is to be made:

	Rent	Light, Heat, and Power	Buildings Repairs and Maintenance
House	$2,400.00	$1,280.00	$2,475.65
Restaurant	1,050.00	1,000.00	525.00
Mineral Water	150.00	10.00	
Telephone	75.00	10.00	
Barber Shop and Bootblack	300.00	50.00	50.00
Cigar and Newsstand	100.00	15.00	
Coat Room	125.00	20.00	13.00
General	200.00	40.00	90.00
Laundry	100.00	75.00	100.00

Depreciation of leasehold and buildings is based on the unexpired lease term of 50 years.

All other depreciation is at the rate of 12% a year.

Miscellaneous equipment includes laundry $7,890, mineral water $3,110, telephone $2,200, cigar and newsstand $575, coat rooms $935. Of the linen, $9,000 belongs to the housekeeping department. Bad debts are estimated as 1% of the outstanding accounts. Laundry costs are to be charged ⅔ to rooms and ⅓ to restaurant.

The employees of the hotel are distributed as follows: 150 to restaurant and kitchen, 91 to rooms, 4 to mineral water, 4 to telephone, 12 to laundry, and 15 to office. Estimated cost of meals is $1 per day, except for the office force, for which the cost is $1.75. Officers' a la carte meal sales, including complimentary meals, are $1,475.90.
complimentary meals, is $1,475.90.

Inventories at the end of the month are:

Direct provisions	$ 5,490.80
Stores provisions	10,979.40
Mineral waters	4,140.25
General supplies	1,890.10

Requisitions of provisions for the month amount to $5,978.49

In closing the books it is decided to charge to the current month ⅓ of the cost of repairs of furniture and furnishings, and of the cost of painting and decorating, and ⅛ of the insurance cost. All accruals are reflected in the trial balance.

Included in both restaurant sales and costs are mineral water sales of $4,375.40. These were charged to the restaurant at sales price.

Draw up a pro-forma balance sheet and statement of profit and loss for the month, with supporting schedules.

XV

The trial balance of a municipal ledger on December 31, 19—, appears as follows (no fund accounts are kept):

Cash on Hand and in Banks	$ 290,000.00	
Accounts Receivable	350,000.00	
Investments	400,000.00	
Deferred Charges	40,000.00	
Deferred Special Assessments Receivable	350,000.00	
Fixed Assets	4,000,000.00	
Interfund Assets	165,000.00	
Audited Vouchers		$ 75,000.00
Contracts Payable		55,000.00
Temporary Loans		100,000.00
Other Current Liabilities		30,000.00
Deferred Credits		15,000.00
Fixed Liabilities		1,500,000.00
Interfund Liabilities		165,000.00
Proprietorship January 1, 19—		3,605,000.00
Taxes and Tax Penalties		550,000.00
Licenses and Permits		50,000.00
Fines and Forfeits		15,000.00
Grants and Gifts		10,000.00
Special Assessments		220,000.00
Departmental Earnings		40,000.00
Public Service Enterprises		200,000.00
Interest		60,000.00
Other Revenues		5,000.00
Non-Revenue Receipts		400,000.00
Administration	50,000.00	
Protection of Person and Property	100,000.00	
Health and Sanitation	80,000.00	
Charities and Corrections	70,000.00	
Highways and Bridges	150,000.00	
Education and Recreation	260,000.00	
Public Service Enterprises	170,000.00	
Indebtedness	160,000.00	
Unclassified	10,000.00	
Outlay from Revenue	240,000.00	

Non-Revenue Outlay	85,000.00	
Non-Revenue Disbursements	125,000.00	
	$7,095,000.00	$7,095,000.00

The following information is obtained from the auditor's office:

Depreciation (not entered) on special assessment assets $5,000; on capital assets $15,000.

Outlay from Revenue, $240,000, is made up of $25,000 utility outlay, $5,000 other, and $210,000 special assessment.

Indebtedness contains special assessment bonds $10,000, utility bonds $10,000, other $55,000.

Non-Revenue Receipts contain special assessment bonds $30,000, other bonds $85,000.

(a) Prepare closing journal entries.

(b) From the data given above and the following information, prepare a consolidated and fund balance sheet:

	General	Special Assessment	Utility	Capital	Sinking Fund	Trust
Cash	$170,000	$ 30,000	$ 35,000	$ 25,000	$14,000	$16,000
Accounts Receivable	150,000	40,000	148,000			12,000
Investments	50,000				300,000	50,000
Deferred Charges	20,000		10,000	10,000		
Fixed Assets		1,000,000	1,200,000	1,800,000		
Interfund Assets	30,000	25,000	40,000		70,000	
Audited Vouchers	20,000	15,000	20,000	5,000	10,000	5,000
Contracts Payable	30,000	20,000	5,000			
Temporary Loans	100,000					
Other Current Liabilities		30,000				
Deferred Credits	10,000		5,000			
Fixed Liabilities		300,000	500,000	700,000		
Interfund Liabilities	90,000	40,000	30,000			5,000
Proprietorship	212,000	1,010,000	873,000	1,127,000	330,500	52,500

(c) Prepare consolidated and fund income and outgo statement with the aid of the following information:

Taxes include $40,000 paid by utility fund.

Grants and gifts—general fund $4,000, trust funds $6,000.

Special assessments—for expense $15,000, for outlay $205,000.

Departmental earnings—general $40,000, including $30,000 profit paid by utility fund to general.

Public service enterprises—general \$40,000, utility \$160,000 (including \$50,000 from general).

Interest—general \$20,000, special assessment \$5,000, utility \$7,000, capital \$3,000, sinking fund \$15,000, trust fund \$10,000.

Other revenues—general \$3,000, utility \$2,000.

Non-revenue receipts—agency transactions \$225,000, special assessment bonds \$30,000, other bonds \$85,000, sinking fund instalment from general \$55,000, trust fund from general \$5,000.

Administration—general \$48,000, sinking fund \$1,500, trust \$500.

Protection of person and property includes \$50,000 paid by general to utility.

Public service enterprises include \$40,000 taxes paid to general, and \$30,000 profit paid to general as indicated above.

The amount of indebtedness is distributed \$135,000 to general fund and \$25,000 to sinking fund, and includes an elimination item of \$55,000 paid by general to sinking fund.

Unclassified expenditures are distributed \$5,000 to general and \$5,000 to trust.

Bonds retired by revenues and sinking fund, \$75,000, are distributed \$10,000 to special assessments, \$10,000 to utility, and \$55,000 to capital.

(d) Prepare indebtedness statement with the aid of the following additional information:

Assessed Valuation	\$15,000,000.00
% Assessed to true value	75%
Indebtedness limitation	10%
Special Assessment bonds—guaranteed	\$270,000.00
Population	250,000
Tax limitation	2%

APPENDIX B

PRACTICE WORK FOR STUDENT—SECOND HALF-YEAR

The problems of this appendix comprise the practice work for the second half-year. For the purpose of allowing flexibility in assignments, more material is given than will ordinarily be used. The work is laid out on the basis of a 15- or 16-week semester.

The problems have little or no sequence. They have been drawn largely from the examinations set by the American Institute of Accountants and by various state C.P.A. boards, to all of whom the author desires to acknowledge the courtesy extended him in allowing their use.

The purpose of this group of problems is to train the student in ability to perceive readily the vital points involved, and then to set up his solution in such form as will properly display his grasp of the points at issue. Only by long and constant practice will the ability to read a problem, or to size up a given situation be acquired. A careful analysis based on correct accounting principles must, of course, precede the formal set-up of a solution.

Of the two steps always necessary in formal problem work, or in the field of actual practice, analysis is perhaps the more important. The basic elements in a given situation having been laid bare, the plan of procedure almost automatically presents itself. The constructive side, viz., the manner of presentation, must not, however, be slighted. There is much of real art in the ability to set up exhibits and schedules which will show openly the true conditions. Most statements present the facts, but so often in such a way that most careful and detailed analyses are necessary before their inter-relationships become apparent. In many statements there is evidence of a consummate art in obscuring vital relationships.

The purpose, therefore, of these problems is to develop ability and facility in the analysis of business facts and the proper presentation of results.

I

1. The firm of A and B began business on January 1, 1918, the terms of the partnership contract specifying that no interest was to be credited on investments or charged on withdrawals, and all profits or losses were to be shared equally. A invested $24,000 and B, $15,000.

On November 30, 1920, the partnership was dissolved, and as the books had not been properly kept, the following statement was submitted to the partners as a basis for settlement, and agreed to by them: cash $14,200; net debit of A $6,300; expenses $15,300; net credit of B $10,500; profit and loss, debit $9,000; credit $1,500; real estate having an estimated market value of $3,300; the bank holds firm's 6 months' 6% note for $10,000, due January 31, 1921, on which interest is unpaid.

B liquidated the assets and liabilities and in due course sold the real estate for $4,000 and paid off the note when due.

Prepare the partners' accounts as of November 30, 1920 and as of the close of liquidation, and a balance sheet as of November 30, 1920.

2. A and B, equal partners in a manufacturing business, admit their factory superintendent, C, as an equal partner with them in the profits without his furnishing any capital, A and B reserving to themselves in case of dissolution any good-will which may have accrued to the business.

On December 31, 19—, a balance sheet was drafted and approved by all concerned as follows:

		Assets	
Real Estate and Plant		$90,000.00	
Merchandise Inventory		35,000.00	
Accounts Receivable		25,000.00	
Notes Receivable		15,000.00	
Cash		18,000.00	$183,000.00
		Liabilities	
Notes Payable		$10,000.00	
Accounts Payable		12,500.00	
A's Account	$4,500.00		
B's Account	4,000.00		
C's Account	2,000.00	10,500.00	
Capital Accounts:			
A		75,000.00	
B		75,000.00	$183,000.00

Later the business was sold as a "going" concern and the partnership dissolved. The purchaser assumes all outside liabilities and pays the sum of $225,000 cash, the real estate and plant being valued at $120,000. Make the entries necessary to close the books of the partnership, and show the condition of the partners' accounts after closing.

3. A is a manufacturer of carpets, and his balance sheet at a certain date appears as follows:

Assets

Cash in Bank	$ 815.00	
Real Estate, Appraised Value	20,000.00	
Machinery, after 10% Depreciation	40,000.00	
Book Accounts Receivable	7,227.50	
Inventory Stock Finished	11,000.00	
Inventory Stock in Looms	850.00	
Inventory, Raw Material and Supplies	107.50	$80,000.00

Liabilities

Bills Payable	$22,000.00	
Book Accounts Payable	28,000.00	50,000.00

He agreed to sell B one-half interest in the business for the sum of $20,000, to be contributed to the new firm, which was to take over A's assets, with the exception of the real estate, and to assume all his liabilities. The good-will of A's business was to be rated at $20,000 in the new firm's books. It was discovered shortly after the commencement of business of the new firm that the inventory of finished stock was incorrect, its value being $8,500 instead of $11,000. It was also found that of the book accounts receivable only $6,227.50 were collectible. One of the debtors owing $1,000 had failed and absconded, previous to the formation of the copartnership, leaving no assets. This fact was known to A and his bookkeeper had been instructed to charge off the account but failed to do so. No correction was made of these discrepancies. The new firm's trial balance at the end of the first year's business appeared as follows:

A Capital Account		$ 25,000.00
B Capital Account		25,000.00
A Personal Account	$ 3,000.00	
B Personal Account	3,000.00	
Merchandise		78,000.00
Book Accounts Receivable	15,400.00	
Expense	1,500.00	
Machinery	40,000.00	
Manufacturing Expense	22,000.00	

Wages	44,000.00	
Rent	1,500.00	
Profit and Loss	600.00	
Book Accounts Payable		45,000.00
Cash	22,000.00	
Good-Will	20,000.00	
	$173,000.00	$173,000.00

The inventory at close of year footed up as follows:

Finished Stock	$28,000.00	
Stock in Looms	1,500.00	
Raw Material and Supplies	1,500.00	$31,000.00

No amount had been charged off for depreciation of machinery, which should have been 10%.

Make proper entries to correct books, and formulate balance sheet showing the standing of the firm, and give a reason for any correction that may be made.

II

1. A and B were partners in the business of manufacturing lathes, sharing profits equally. B was the financial man having charge of the books and accounts; A had invented the lathe and knew the practical part of the business. On January 1, 1916, B retired from the concern. The capital accounts of the two partners on that date stood A, $15,000, and B, $16,000. A agreed to pay B for his half-interest in the business the sum of $20,000. Of this amount, $5,000 was paid in cash (from the funds of the firm), and for the remainder B accepted A's note, which was secured by a mortgage on A's dwelling house. Because of A's lack of knowledge regarding accounts, the cash payment alone appeared on his books.

A conducts the business himself for five years. He was not aware of the fact that B had regularly depreciated machinery 10% per year (on the reducing basis) and failed to take depreciation into consideration when closing his books. The profit and loss accounts on his books showed profits for these five years to have been $5,000, $5,300, $6,750, $8,500, and $10,600. A had withdrawn over and above salary, $16,250.

C, a friend of A's, also a practical machinist, came into possession of a large inheritance. He knew the flourishing condition of A's business and wished to buy a half-interest. The premises which A was occupying were poorly adapted to the needs of the business. They both were of the opin-

ion that a modern factory building would very materially reduce the cost of production and also facilitate prompt delivery. They agreed that the good-will was worth three times the average profits for the last five years. C was to obtain a half-interest in the business and good-will, by investing cash equal to A's capital account and half the good-will on January 1, 1921.

A's bookkeeper, on January 1, 1921, made up the following statement:

Cash $150; machinery $45,000; accounts receivable $14,000; finished lathes (20) costing $500 each, selling price $750; half-finished lathes (10) costing $325 each; stock of bar iron, castings, wheels, extras, and other supplies, $3,500; with liabilities in the shape of accounts and bills payable amounting to $30,000.

The above figures did not take into consideration depreciation on machinery. A had bought machinery for the plant during the five years as follows: $3,000, $3,500, $4,000, $4,500, $5,000 respectively.

It is desired to place the full value of the Good-Will account on the books. C was admitted as of January 1, 1921, on the above terms and according to the figures given above.

Show the entries necessary to give effect to the wishes of the partners.

On March 1, the Carman Company instructed A to deliver two machines which A had been holding for shipping instructions since September, 1920. The bookkeeper then awoke to the fact that these had been charged on his books on September 20, 1920; that he had overlooked this charge and had included them in his inventory. The partners agreed to make the correct adjustment at the end of the year. Being, however, unable to arrive at an agreement at that time, they called in an accountant, who found the following facts recorded on their books:

Cash $1,000; machinery $50,000; building and real estate $40,000; accounts receivable, good, $9,000; sales $122,480; purchases from January 1 to date $50,000; wages $36,000; rent $3,000; manufacturing expenses $10,000; selling and administrative expense $6,000; accounts payable $4,000; expense of moving machinery $7,375; good-will (?); A, Capital account (?); C, Capital account (?); stock on hand, 5 finished lathes at $500 cost, 14 half-finished at $325, and raw material and supplies amounting to $8,000.

While moving the machinery from the old building to the new factory it was necessary to work overtime in order to get out lathes to fill orders for customers, for which wages were paid at the rate of time and a half. The amount of such overtime was $9,000, and was included in the $36,000 mentioned above.

Both partners were fair-minded; neither desired to obtain an advantage over the other. Both agreed on a depreciation from January 1, 1916, at the rate of 10% on the reducing basis. They also agreed that a contribution should be made by the partner having the lesser capital to bring his interest up to that of the other, also that in distributing the profits for the current year an allowance of 6% interest on excessive capital invested during the past year should be made.

Make a statement to be given to the partners and show on this statement the amount necessary to be contributed, also the division of profits for 1921, and make any correcting entries you think necessary.

2. A, B, and C formed a partnership. A agreed to furnish $10,000, B and C $7,000 each. A was to manage the business and receive one-half of the profits; B and C were each to receive one-fourth. A supplied merchandise worth $8,500, but no additional cash. B turned over to A, as managing partner, $9,000 cash, and C turned over $5,500. The business was conducted by A for some time but without keeping exact books. While managing the business, A purchased additional merchandise amounting altogether to $75,000 and made sales of $100,000. The cash received and paid out for the partnership was not kept separate from A's personal cash. In order to straighten out matters, B took over the management. He found receivables amounting to $20,000 and of these he collected $4,500. The merchandise still on hand he sold for $500. These receipts he deposited in a bank to the credit of the firm. The remaining accounts proved worthless. The outstanding accounts payable amounted to $2,000, of which $1,500 had been incurred in purchasing merchandise and $500 for expenses. These accounts he paid. A presented vouchers showing that during his management he had paid other expenses of $2,400. By mutual agreement B was held to be entitled to $100 on account of interest on excess capital contributed and A and C were to be charged $75 each for shortage in contribution of capital.

(a) Prepare Trading and Profit and Loss accounts and account of each of the partners, indicating the final adjustment to be made in closing up the partnership.

(b) Show how the above final adjustment would be modified if A proved to have no assets or liabilities outside the partnership.

3. For the purpose of making a joint speculation in stocks, A contributes $3,000, B $2,000, and C $1,000, and they agree to share the profits or loss in proportion to the amounts contributed. October 15, 1920, A deposited the $6,000 with his broker, giving instructions to buy 300 shares of New York Central and 300 shares of Chicago, Burlington and

Quincy. The order was executed October 16, 1920, New York Central at 130 5/8, and Chicago, Burlington and Quincy at 127. April 10, 1921, under instructions from A, New York Central was sold at 151 1/8 and Chicago, Burlington and Quincy at 191 1/2, a check being received from the broker to close the account. How much does A owe B and C for their interests in the deal calculating interest at 6% (365 days to the year), broker's commission at 1/8% of the par value of $100 per share, and revenue tax of $2 for each 100 shares?

III

1. The Patent Specialty Company was organized July 1, 19—, with a capital of $100,000 to manufacture novelties. The following transactions occurred:

July 1, 19—, one-half of the capital stock was subscribed and issued, 10% being called and paid on that date in cash. Legal and other incorporation expenses amounting to $500 were paid.

August 20, 19—, patent covering novelty, was purchased for $50,000, payable one-half in stock and one-half in cash; the stock was issued and delivered, $2,000 paid in cash and note given for balance, due in one month, 6% interest. The patent was subject to royalty rights granted to the Novelty Company which terminated at date of purchase. All accrued royalties were to pass with patent and no royalty rights were granted by the Patent Specialty Company.

August 27, 19—, the village board of trade donated a lot valued at $5,000 in consideration of agreement to erect and equip a plant at cost of not less than $25,000.

September 13, 19—, a further call of 70% on the stockholders was paid. The note given in part payment for the patent was paid at maturity. December 31, 19—, the following facts existed:

Payments on account of salaries, interest, insurance, etc., amounted to $2,250, with $250 accrued; contracts for construction and equipment amounting to $35,000 had been given and were 75% completed and 40% paid; royalties amounting to $2,725 had been received and $190 was accrued.

Prepare journal entries to cover foregoing, and also statement to display financial condition at December 31, 19—.

2. A corporation is formed with a capital stock of $500,000, of which $200,000 is preferred and $300,000 is common stock, to acquire and consolidate three existing corporations designated as A, B, and C, and having the following status respectively:

	Assets	Liabilities	Surplus	Deficit	Capital
A......	$171,000.00	$ 56,000.00	$15,000.00	....	$100,000.00
B......	165,000.00	80,000.00	....	$5,000.00	90,000.00
C......	108,000.00	47,000.00	6,000.00	....	55,000.00
	$444,000.00	$183,000.00	$21,000.00	$5,000.00	$245,000.00

The several vendor companies contract with the promoter to sell their assets, as above stated, including good-will, but excluding cash funds, at the following prices respectively, viz.: A $125,000; B $100,000; C $75,000, payable one-half in cash and one-half in preferred stock to be issued therefor by the new company, which is also to assume all outstanding obligations.

The promoter or vendor contracts with the new or vendee company to acquire the several properties subject to the liabilities as stated, and to provide an additional working capital of $100,000 cash, and to take in payment therefor the entire authorized capital stock of the new company, out of which the subscribing incorporators and directors will acquire their stock by purchase from the underwriters.

The common stock is underwritten by bankers at 80%, with bonus of one share of preferred to each 10 shares of common stock. The bankers are also to take an additional $10,000 of preferred stock at par, as part of their agreement.

(a) Frame the opening entries and balance sheet of the vendee company, showing the costs respectively of assets, good-will and organization expenses on the assumption that the terms of the several contracts are known to all the parties concerned and form the basis of the initial values established.

(b) Frame closing entries of A company, showing cancellation of stock and distribution of proceeds of sale among stockholders.

(c) Show promoter's compensation or profit for effecting the consolidation.

3. Acting through an agent and trustee, a syndicate acquires the following assets of two corporations as valued by appraisement and examination:

	B Z Company	R J Company
Timber lands........................	$1,500,000.00	$1,000,000.00
Timber rights........................	700,000.00	800,000.00
Trams and logging outfits.............	100,000.00	150,000.00
Mill structures and equipment.........	200,000.00	250,000.00
Materials and supplies................	20,000.00	30,000.00

	B Y Company	R J Company
Logs	100,000.00	200,000.00
Lumber	230,000.00	320,000.00
Bills and notes receivable	40,000.00	30,000.00
Customers' accounts	110,000.00	220,000.00
	$3,000,000.00	$3,000,000.00

This syndicate organizes a lumber company and sells it all of the above property and accounts, excepting the timber lands. The syndicate also makes a stumpage contract with the company, conveying the right at stipulated prices per M feet to remove from such lands all of the milling timber. The syndicate agrees to receive as a consideration $1,500,000 of the lumber company's preferred stock and $3,000,000 of its common stock.

The syndicate also organizes a land company and sells it the timber lands and the stumpage contract made with the lumber company, and agrees to receive as consideration $1,500,000 of the land company's first mortgage bonds and $1,400,000 of its capital stock.

In organizing these companies the syndicate paid into the treasury of the lumber company $500,000 in cash for a like amount of its common stock, and into the treasury of the land company $100,000 in cash for a like amount of its capital stock.

Prepare a balance sheet of each company, giving effect to the organization transactions and to the purchases made by each from the syndicate.

IV

1. The X Y Z Corporation has an authorized issue of $5,000,000 first mortgage 5% bonds in $1,000 denominations. Of these $2,502,000 are in the hands of the public, and the balance in escrow in the hands of trustees, to be taken down only to take up the bonds of underlying companies, or for new construction up to 80% of the expenditures; but the net earnings above operating expenses and taxes for the previous year must equal at least 1 3/4 times the interest on all outstanding bonds, including those to be taken down. The net earnings of the corporation for a certain year were $273,990.44. There were also in the hands of the public the following bonds of subsidiary companies: $106,000 5's and $295,500 4 1/2's. The expenditures for construction amounted to $300,000.

State how many bonds can be taken down for construction, showing how you arrive at the result.

2. A corporation issues $100,000 in 20-year bonds, dated January 1, 1918, and redeemable out of revenue by means of 20 annual sinking fund

instalments of $5,000 each. December 31, 1918, $5,000 is reserved out of profits and placed to the credit of Reserve for Redemption and $5,000 is deposited in a trust company at 2% and charged to Sinking Fund for Redemption. Separate sinking fund books are opened in the ledger in which Cash is charged and Sinking Fund credited with said first instalment.

February 2, 1919, investments are purchased for the sinking fund and the principal thereof is charged on the sinking fund books to separate investment accounts, while the accrued interest is charged to Revenue from Investments. The investments so purchased are as follows:

1. Two 5% gold bonds, due 1950, at $1,000 each, interest payable May 1 and November 1, at par and accrued interest.
2. One 6% gold bond, due 1940, of $1,000, April 1 and October 1, at 120 and accrued interest.
3. The company loans on first mortgage, $1,400 at 5%, interest payable August 1 and February 1.

The interest is regularly received and deposited in the special account charged to Cash and credited to Revenue from Investments which latter account is in turn closed by transfer of balance to Sinking Fund for Redemption.

December 31, 1919, the second annual reserve is made in the amount of $5,000, less the net income of the sinking fund for the expired current year as shown by the sinking fund books, and a corresponding deposit is made in the special fund, while the proper entries of the receipt thereof are also made and posted in the sinking fund books. March 1, 1920, two 6% bonds of the same issue as purchased in the previous year are bought for the sinking fund at 116 and accrued interest, and one of the 5% bonds is sold at 103 and accrued interest, and a first mortgage for $3,500 at 5%, March 1 and September 1, is purchased. The 6% bond bought in 1919 and held at 120 is written down to 116, and the remaining 5% bond held at par is written up to 103 by cross-entry between the principal account and the Revenue from Investments account.

December 31, 1920, the third instalment is reserved and deposited in the same manner and on the same principle as the preceding ones.

Frame the necessary journal entries on both the general and the sinking fund books to give expression to the foregoing transactions; also the accounts affected in both ledgers showing the status of sinking fund at the beginning of 1921.

3. The Phoenix Telephone Company found it necessary to increase its plant to accommodate 5,000 subscribers. Arrangements were made for the necessary additions and 1,000 of first mortgage 6% 50-year gold bonds

were issued. A clause in the mortgage stipulated that a sum equal to 2% of the total bond issue should be set aside annually out of the profits of the company for the redemption of such bonds. The average annual cost of maintaining and operating was found to be $27.50 per telephone, and $30,000 was estimated for other expenses. January 1, 19—, 4,000 telephones were in use and the contractors agreed to complete their work at the rate of 250 telephones per quarter. What annual rental per telephone would the company have to charge in order to meet its obligations and to pay a dividend of 5% on $1,000,000 of its stock?

4. The American Manufacturing Company is incorporated by issue of preferred and common capital stock to three concerns doing the same class of business. An examination of the books was made and the properties valued by actual appraisement by a disinterested expert. The following is a summary of the condition of each of the three plants:

	A. Jackson and Company	Smith and Company	Spear
Accounts receivable (good)....	$25,000.00	$15,000.00	$50,000.00
Stock on hand...............	25,000.00	20,000.00	10,000.00
Plant and machinery.........	50,000.00	25,000.00	90,000.00
Accounts and bills payable....	10,000.00	20,000.00	15,000.00
Mortgages..................	20,000.00	....	35,000.00
Average annual net profit 5 years..................	10,000.00	15,000.00	8,000.00

You are consulted regarding the capitalization of the new company. How should this stock be apportioned to the three concerns? In capitalizing the new company you must provide $100,000 additional preferred and common stock, to be offered for sale at some future period. Make an equitable distribution, taking into consideration the value of the net assets and the good-will, the latter to be on the basis of one-half of the annual net profits for the last five years.

V

1. A company has acquired machinery, which cost $100,000 and which it expects to be able to use for 10 years. The scrap value at the end of that time is estimated at $25,000. A bond issue of $75,000 due in 10 years, bearing 6% interest and secured by a mortgage on the machinery, is floated at 98 soon after the purchase of the machinery. The trust indenture requires that at the end of each year, before the payment of dividends, a sum shall be set aside and charged against earnings sufficient to provide a sinking fund on a 5% basis for the redemption of the bonds at maturity.

The president of the company is in favor of providing a reserve for depreciation on the machinery by the sinking fund method, using 5% as a basis, although he does not advocate creating a replacement fund for the machinery as well as a sinking fund for the bonds. The treasurer contends that it is not necessary to provide any reserve for depreciation, asserting as his reason that the creation of a sinking fund reserve and a reserve for depreciation would involve a double charge against profits and, further, that as the sinking fund reserve is obligatory the depreciation reserve is not required.

(a) Compute the amount of the annual contribution to the sinking fund for the redemption of the bonds.

(b) Set up a table showing the accumulation of the fund, on the assumption that it earned exactly 5%. Also indicate the annual entries for the sinking fund and for the sinking fund reserve.

(c) Give your opinion as to whether or not there should be a reserve for depreciation as well as a sinking fund reserve. If the sinking fund reserve is sufficient, what disposition will eventually be made of it? If two reserves are necessary, when and in what manner will they be closed out?

$1.05^{10} = 1.62889463.$

2. What could a purchaser who wished to realize 3% on his investment give for a bond for $10,000 which had four years to run at 5% interest payable yearly, and thereafter was repayable with a bonus of 10%?

3. In auditing the books of a corporation you find that, in order to provide a sum to redeem a mortgage of $100,000 falling due at the end of 10 years, a reserve of $8,000 per annum has been set aside annually for three years, but that, contrary to intention, the company has failed to accumulate interest thereon. Assuming interest at 4% (convertible annually) what should have been the total accumulations to date, and what amount should now be set aside annually for the next seven years in order to complete the sinking fund? $1.04^7 = 1.31593.$

4. A railroad company has the following capitalization:

	Shares
Capital stock outstanding (par value $100)	92,438
Capital stock issued and in treasury	6,439
Capital stock unissued	1,123
	100,000

The directors declare a dividend of 10% payable in the stock of the corporation, and the resolution authorizes the officers of the company to use the treasury stock and unissued stock for that purpose, and directs

them to purchase on the open market as much more stock as may be required for distribution. How much stock must be purchased for this purpose, so that when the distribution is completed all the stock shall be outstanding and none shall remain in the treasury? Scrip is to be issued for fractional parts of a share.

VI

1. X, Y, and Z, foundry men, unable to meet their obligations suspend payment January 1, 19—, and appoint a trustee to realize and liquidate for the benefit of their creditors. The books show the following assets and liabilities:

Assets		*Liabilities*	
Land and Buildings...	$125,000.00	Mortgage on Foundry Premises...........	$100,000.00
Machinery and Tools .	75,000.00	Accounts Payable.....	105,000.00
Furniture and Fixtures	10,000.00	Notes Payable.......	135,000.00
Materials and Supplies	95,000.00	Interest Accrued on Mortgage..........	1,250.00
Notes Receivable.....	15,000.00	Taxes Accrued (estimated)............	835.00
Accounts Receivable...	115,000.00	Capital..............	93,365.00
Cash...............	450.00		
	$435,450.00		$435,450.00

The trustee's cash receipts and payments during the year 19— are as follows:

Receipts		*Payments*	
Notes Receivable (outstanding January 1, 19—).............	$ 15,000.00	Notes Payable........	$ 25,000.00
Accounts Receivable (outstanding January 1, 19—)...........	106,500.00	Accounts Payable.....	35,000.00
Cash Sales...........	5,435.00	Interest on Mortgage, one Year at 5%....	5,000.00
Notes Receivable (contracted during 19—).	13,500.00	Taxes for Preceding Year..............	865.00
Accounts Receivable (contracted during 19—).............	212,000.00	Purchase of Material and Supplies.......	98,000.00
		Labor...............	135,000.00
		General Expenses.....	45,000.00
		Interest on Bills Payable to September 30, 19— at 5%........	2,800.00
Total Receipts....	$352,435.00	Total Payments...	$346,665.00

Other transactions are as follows:

Sales on Credit		$335,000.00
Bad Debts Written off Accounts Prior to January 1, 19—	$8,000.00	
Bad Debts Written off Accounts Subsequent to January 1, 19—	2,000.00	10,000.00
Discount and Allowances to Customers' Accounts Prior to January 1, 19—	$500.00	
Discounts and Allowances to Customers' Accounts Subsequent to January 1, 19—	300.00	800.00
Notes Received from Customers		20,000.00
Notes given to Creditors ($110,000 being renewals)		180,000.00
Inventory of Materials, December 31, 19—		92,000.00

At the end of the year the business is returned to the owners. Prepare realization and liquidation accounts and balance sheet.

2. The officers of the A Company find they are unable to meet current obligations and a receiver is appointed on April 28, 19—. The receiver calls for an inventory and a statement as at date of appointment, which is given as follows:

Statement A Company
April 28, 19—

Assets		*Liabilities*	
Machinery and Equipment	$507,300.00	Reserve for Depreciation	$ 7,300.00
Consigned Merchandise	220,000.00	J. Smith and Company	250,000.00
Merchandise at Mill	115,000.00	Bank Loans	105,000.00
Cash	800.00	Acceptances	15,000.00
Accounts Receivable	1,400.00	Bank Overdraft	1,000.00
Unexpired Insurance	800.00	City Taxes Accrued	4,000.00
Employees' Liberty Bonds	4,700.00	Collateral Notes Payable	4,700.00
		Mortgage on Machinery	100,000.00
		Accrued Interest on Mortgage (to date)	3,000.00
		Lease—Machinery	30,000.00
		Accrued Interest on Lease Agreement	10,000.00
		Accounts Payable	110,000.00
		Capital Stock—Common	100,000.00
		Capital Stock—Preferred	100,000.00
		Surplus	10,000.00
	$850,000.00		$850,000.00

On November 20, the receiver having disposed of all assets for cash (except consigned merchandise, and $400 accounts receivable which were considered doubtful) calls upon you to prepare an interim statement for the information of the stockholders and creditors.

He leaves the form to your judgment but suggests that it be as concise as possible and that you show his valuations as well as book value, at date of receivership. He also wants a summary of his transactions, not necessarily to include profit or loss showing, and finally wants the statement to show conditions as they are at date you are called in.

You find that the collateral notes payable were for accommodation of employees and were secured by deposit of bonds, also the property of employees, as per statement. The bonds have now been delivered to the employees and the notes paid by them.

The court has authorized payments of the city taxes and accrued interest of $400, which latter amount had been omitted from the statement but included by receiver in his valuation statement. Federal taxes were also found to be due and were also paid (amount $1,000).

The lease covered machinery worth $30,000, but the firm that furnished this machinery has accepted a release of the A Company's equity in this machinery as full payment of notes under lease agreement and the accrued interest.

The receiver finds that J. Smith and Company's account represents advances on the entire consigned merchandise and that this merchandise has been pledged to secure this claim in part (to the extent of value of the merchandise). Receiver accepts book value for purpose of his records.

After removal of the leased machinery the remaining machines and equipment were sold for $200,000 and the mortgage (and accrued interest to date of payment $5,000) was paid in full. (Receiver's original value placed upon all machinery was $200,000.)

The merchandise at the mill was valued by the receiver at $75,000, but after 6 months' operation the amount on hand was sold without inventory for $25,000.

The accounts receivable were valued by the receiver at $1,000 and the amount was in fact realized in cash, the balance appearing doubtful.

Unexpired insurance is accepted by receiver at book value. November 10 a rebate of $100 was received and all policies were canceled.

Upon comparing the statement with the books you find accounts payable understated $10,000 in the statement given receiver because of an error on the part of a bookkeeper when closing books at April 28.

Claims were duly filed for entire amount owing (except $10,000 ac-

counts payable). An account in purchase ledger was disallowed and is in dispute (amount $5,000).

The receiver sold merchandise to the amount of $75,000, all of which had been paid for. Other receipts were rent for portion of building—sublet—$1,000; unclaimed wages $500; interest on bank account to November 20, 19—, $200; cash surrender value of insurance policy on life of treasurer $1,000.

Other payments were: receiver's accounts payable $50,000; taxes $3,000 (assessed since receivership); rent $2,000; legal expenses $5,000. No fee has been allowed receiver or will be considered in your statement.

An analysis of the ledger determines the fact that only the following bills and expense vouchers had been carried through the invoice register since receivership, and all had been paid promptly, viz.: labor $20,000; materials $20,000; shop expense $3,000; heat and power $2,000; freight $1,000; general expense $4,000.

VII

1. The trial balance of the Occidental Timber Company on January 1, 19—, was as follows:

Cash	$ 2,618.03	
Accounts Receivable	21,111.17	
Inventory	36,133.32	
Unexpired Insurance	559.44	
Plant and Equipment	352,109.75	
Timber and Lands	551,539.31	
Preferred Claims		$ 37,011.99
First Mortgage Bonds, 6%		212,500.00
Bond Interest Accrued—6 months		6,375.00
Unsecured Creditors		64,471.64
Capital Stock		400,000.00
Surplus		243,712.39
	$964,071.02	$964,071.02

The company being unable to meet its current obligations, the Western Trust Company was appointed receiver on January 1, 19—.

The transactions under the receivership for the year following are hereby summarized:

Purchased Logs (half was bought for cash, less cash discounts, and the balance on credit)	$ 9,646.22
Operating Expenses	202,972.81

Commissions	4,214.14
Demurrage	326.00
Freight Inward	585.53
General Expense	4,837.40
Salaries	12,000.00
Shipping Expense	13,574.10
Taxes	1,421.00

All paid in cash.

Allowance for stumpage cut amounting to $50,000 was credited to Timber account. Interest on bonds to December 31, 19—, was paid in full and the outstanding bonds were reduced to $200,000, December 31, 19—, by paying off $12,500 at 101. Sales amounted to $450,000 gross, of which $300,000 was received in cash as net payment by customers.

Freight Allowance to Customers	$70,510.00
Discounts Allowed	556.33
Discounts Received	500.00
Profit from Commissary	5,000.00
Sundry Income	3,500.00

The accounts receivable of January 1, 19—, realized $20,000 net. Preferred claims were paid in full. Depreciation of $3,500 was allowed on plant and equipment. Unexpired insurance on December 31, 19—, amounted to $125. Inventories were $40,000.

Prepare Realization and Liquidation account, Cash account, and balance sheet, December 31, 19—, also the receiver's Profit and Loss account, proving the gain shown by the Realization and Liquidation account and showing all the elements making up the net amount.

2. A, B, C, and D have decided to dissolve partnership. To that end they have liquidated all their liabilities, and at the date of the first division of cash among the partners the conditions are as follows:

Partners	Capitals	Loans	Profit and Loss Ratio
A	$22,000.00	$ 7,000.00	40%
B	19,000.00	6,000.00	30
C	12,000.00	14,000.00	20
D	7,000.00	13,000.00	10
Totals	$60,000.00	$40,000.00	100%

Cash available for distribution	$ 20,000.00
Other assets not yet realized (of doubtful value)	80,000.00
	$100,000.00

State which partners should participate in the distribution of the $20,000, how much cash each should receive, whether the payments should be applied against the capital accounts or the loan accounts. Explain the procedure of determining the distribution. Assume that none of the partners has any private property.

3. The Blank firm is engaged in the lumber business owning timber lands in fee and licensed, sawmills, and other equipment, and 90% of the stock in another lumber corporation. They instruct an accountant to examine their accounts for the purpose of ascertaining the true financial position. The following is a trial balance from the firm's books on December 31, 1921, after closing:

Cash	$ 20,000.00	
Accounts Receivable	150,000.00	
Logs and Manufactured Lumber	200,000.00	
Advances on Account of Season's Logging Operations	100,000.00	
Investments in Controlled Company (900 shares—cost)	99,000.00	
Timber Lands (cost)	500,000.00	
Mill Plants and Equipment (cost)	250,000.00	
Loans Payable		$ 150,000.00
Accounts Payable		250,000.00
Deposits on Order		50,000.00
Mortgage on Plants		150,000.00
Controlled Company Current Account	20,000.00	
Partners' Capital		739,000.00
	$1,339,000.00	$1,339,000,00

The controlled company's trial balance on December 31, 1921, is:

Cash	$ 5,000.00	
Accounts Receivable	70,000.00	
Logs and Manufactured Lumber	40,000.00	
Timber Lands	50,000.00	
Mills	100,000.00	
Bills Payable		$100,000.00
Blank Firm		30,000.00
Accounts Payable		20,000.00
Capital		100,000.00
Surplus		15,000.00
	$265,000.00	$265,000.00

The following matters disclosed by the accountant's examination are not included in the accounts prior to closing December 31, 1921. The appraised value of the timber lands of the firm, consisting of 200 square miles, and those of the controlled company, consisting of 20 square miles, is $3,000 per square mile. The owners wish these taken up in the accounts. There are unpaid license fees on the timber lands of the firm due in 1927 of $8 per square mile, which must be paid to retain the privilege of cutting the timber under the stumpage agreement. Of the bills payable of the controlled company $50,000 are indorsed by the firm. The latter has also discounted customers' notes amounting to $25,000. The difference in the intercompany accounts consists of a charge by the firm to advances on logging operations instead of to the controlled company. There are prepaid taxes in the controlled company of $2,000. The stock on hand of logs and lumber are pledged as security for loans of $100,000.

Prepare:

(a) Adjusting entries for above.
(b) Corrected trial balances.
(c) Consolidated balance sheet.
(d) Write a brief report covering the examination and balance sheet.

VIII

1. A and B are in partnership as commodity brokers, A receiving 55% of the profits and B 45%. In order to strengthen the financial statements of the firm they agreed some years ago to turn in as partnership assets certain securities held by them as individuals. Under a separate agreement, dividends on these securities as well as profits or losses from sales were to accrue to each as though separate ownership were retained. In addition the partnership as such has purchased securities which it holds as investments in the same companies.

You are furnished a trial balance of the general ledger before closing, which shows the following condition at December 31, 19—:

		Debits	Credits
Cash and Other Current Assets		$320,000.00	
Securities:			
Firm	$ 50,000.00		
A	100,000.00		
B	50,000.00	200,000.00	
Office Furniture and Fixtures		15,000.00	
Deferred Charges to Profit and Loss		3,000.00	

	Debits	Credits
Expense Accounts	40,000.00	
Accounts Payable		$ 55,864.00
Notes Payable		150,000.00
Capital Accounts:		
A		223,500.00
B		75,000.00
Commissions and Other Earnings (including dividends on stocks held by firm)		70,000.00
Dividends Received for Personal Accounts:		
A		2,000.00
B		1,636.00
	$578,000.00	$578,000.00

A statement is also handed to you of the securities held, divided between firm purchases and partners' individual holdings above mentioned as follows:

A

	Individual Holdings			Partnership Holdings		
		Book Value			Book Value	
	Shares	Price	Amount	Shares	Price	Amount
X Company	1,280	50	$ 64,000.00	200	50	$10,000.00
Y Company	300	120	36,000.00	175	100	17,500.00
			$100,000.00			$27,500.00

TOTAL

	Shares	Value December 31, 19— Price	Amount
X Company	1,480	55	$ 81,400.00
Y Company	475	140	66,500.00
			$147,900.00

B

	Individual Holdings			Partnership Holdings		
		Book Value			Book Value	
	Shares	Price	Amount	Shares	Price	Amount
X Company	600	50	$30,000.00	164	50	$ 8,200.00
Y Company	200	100	20,000.00	143	100	14,300.00
			$50,000.00			$22,500.00

TOTAL

		Value December 31, 19—	
	Shares	Price	Amount
X Company........	764	55	$42,020.00
Y Company........	343	140	48,020.00
			$90,040.00

You are requested by the partners:

(a) To prepare a balance sheet showing the actual status of each partner's investment in the business at December 31, 19—, giving effect to the appraised value of securities at that date (as indicated by the total column in the above table).

(b) To submit a scheme of capital stock distribution between A and B, for use if the partnership should be converted into a corporation, each partner turning in his individual security holdings to such corporation.

Interest has been credited on capital accounts at 6 % during the year (to A $12,600, to B $4,250) and such interest has been included among the expenses.

2. A company with head office in Chicago and factory at South Bend, Ind., conducts three selling branches in New York, San Francisco, and Montreal, which are supplied with goods from the factory, the invoices being sent out from the head office.

The branches keep their own sales ledgers, send out monthly statements to customers, and receive cash against their ledger accounts, which they remit weekly to Chicago.

All branch expenses, including salaries and wages, are paid by the branches from petty cash accounts, kept at a fixed balance of $500, by draft on head office.

The following information is supplied by the branches at December 31, 19—, summarizing the transactions of the previous six months:

	New York	San Francisco	Montreal
Rent and Taxes Paid......	$ 200.00	$ 175.00	$ 75.00
Sales for 6 months to December 31, 19—...........	12,500.00	11,800.00	10,225.00
Salaries and Wages........	1,650.00	1,520.00	1,600.00
Returned Sales............	200.00	100.00	250.00
Allowances to Customers...	50.00	40.00	30.00
Bad Debts...............		125.00	60.00
Cash Sales...............	6,250.00	5,380.00	6,100.00

	New York	San Francisco	Montreal
Cash Received from Customers on Ledger Accounts	10,850.00	10,260.00	9,150.00
Debtors, July 1, 19—	5,820.00	6,140.00	7,240.00
Debtors, December 31, 19—	7,220.00	7,415.00	7,975.00
Petty Cash, July 1, 19—	500.00	500.00	500.00
Petty Cash, December 31, 19—	500.00	500.00	500.00
Stock, July 1, 19—	3,450.00	3,820.00	3,650.00
Stock, December 31, 19—	4,300.00	4,720.00	4,500.00
Goods Received from Head Office and Factory	11,500.00	10,240.00	10,350.00

Required:

(a) Branch accounts on head office books.
(b) Final general trial balance.
(c) Branch Profit and Loss accounts.

3. It is now becoming quite common practice for corporations to insure the lives of their principal officers, so that upon their deaths the corporations may be, in a measure, reimbursed for the loss to the business. You are asked to indicate what sort of entries would be made by a company, from time to time, if it paid the insurance premiums on a policy of insurance for $50,000 carried on the life of its president under the four classes of insurance policies indicated below:

10-year renewable term policy.
20-payment life policy.
Straight life policy.
20-year endowment policy.

Also indicate what entries should be made in the books for the receipt of the $50,000 principal of the different classes of policies, supposing the president of the company died during the fifth year of the insured term.

IX

1. A company packs a coupon in each box of goods sold. The company agrees to redeem 100 coupons with premiums costing $1 apiece. 25% of the coupons are never presented for redemption.

Prepare sample journal entries for the bookkeepers to follow which will give the last of each month the expense for the month for coupons given out, the amount of premiums on hand, and the gross and net lia-

bility for outstanding coupons, and state briefly how these entries will produce the result wanted.

2. A trading stamp company sells its stamps for $5 per thousand. It redeems these stamps in cash for $4 per thousand or in premiums of which the average cost is $4.50 per thousand. The income on the investments is $8,748 per year. It estimates that 5% of the stamps sold will lapse and never be redeemed. It anticipates the profit to be at the rate of 10% on the balance of stamps sold after deducting the redemptions and estimated lapses.

The trial balance of January 31, 19—, is as follows:

	Debits	Credits
Balances January 31, 19—:		
Cash	$ 23,510.00	
Stamps on Hand, at Cost	1,525.00	
Investments in Bonds	152,825.00	
Good-Will	100,000.00	
Premiums, at Cost	38,710.00	
Capital		$100,000.00
Accounts Payable		6,010.00
Balances January 31, 19— (which have not changed during the month and are to be adjusted by the January operations):		
Accrued Interest	2,475.00	
Lapses	76,388.00	
Anticipated Profits	23,577.00	
Unredeemed Stamps		312,158.00
Surplus		8,717.00
Balances January 31, 19— (showing operations for January):		
9,600,000 stamps redeemed in January in premiums	43,200.00	
4,912,500 stamps redeemed in January in cash	19,650.00	
Stamps sold in January		65,000.00
Expenses, January	10,525.00	
Coupons Collected in January		500.00
Totals	$492,385.00	$492,385.00

Submit an operating account and Profit and Loss account for the month of January and a balance sheet as at January 31, 19—.

3. In a certain department of a large dry goods house the purchases for a year were $30,000. They were in the first place marked up for "selling" purposes to $45,000. Later additional mark-ups amounting to

$2,000 were made and mark-downs were also recorded aggregating $5,000. At the end of the fiscal period there were found to be on hand goods of the marked selling value of $10,000. State how you would arrive at their inventory value for the purpose of closing the books and calculate the amount. Explain fully.

4. Highland County undertakes two public improvements, viz.: a road estimated to cost $50,000, and a sewer estimated to cost $40,000.

The work is to be paid for out of proceeds from the sale of county bonds, falling due at various dates and redeemable from assessments, levied against property presumably benefited, to the amount of the actual cost of the work and incidental charges when these are determined.

Bonds to the above amounts are accordingly sold, realizing a premium of 1%, which is added to the respective funds; the cost of the two undertakings when completed is $50,000 and $40,500 respectively, for which assessments are accordingly levied.

Assessments are subsequently collected as follows: For roads $30,200, with accrued interest of $1,310; for sewers $29,400, with accrued interest of $1,250. The interest in each case goes into the related funds.

Road bonds of the par value of $20,000 and sewer bonds of the par value of $15,000 mature and are redeemed.

Frame journal entries, post to ledger accounts, and prepare a trial balance from which the status of the county debt and of the funds and assessments at the conclusion of the above transactions can be ascertained and determined.

X

1. In January 15, 1906, Howard Robinson and four others acquired a tract of 600 acres at a cost of $20,000. On March 1, 1906, they incorporate the Nob Hill Realty Company for the purpose of acquiring subdividing, and selling this tract for residence purposes.

The par value of the stock is $100 per share, the capital $300,000, of which $120,000 is issued for the land purchased, and the balance $180,000 is paid for in cash. The directors engage a landscape architect to lay out the tract, a special feature of which is to be a beautiful park, together with tree-lined boulevards and driveways. In accordance with the architect's advice the directors defer marketing any portion of the property until the year 1916.

Owing to errors in early development work the company is compelled to borrow $50,000 at 6% on March 1, 1915. The loan is secured by a

mortgage on the entire property, with the customary release clause for individual lots upon payment of $25,000 of the loan, and $1,000 on each lot for which release is demanded.

Sales of lots are made beginning March 1, 1916.

The sale contract provides that the company will maintain the park and driveways in perpetuity, and to insure this a fund will be created for the permanent maintenance and care of the park and driveways, the estimated annual expense of which is $6,000. It is agreed with purchasers of lots that one-third of all cash received from sales shall be invested in sound bonds yielding 4% net, until $150,000 has been so invested. It is further agreed that upon the sale of all the lots, the bonds will be turned over to a board of trustees to be elected by lot-owners and designated trustees of Nob Hill Park, who shall take over the management of the park and driveways. In November, 1921, Robinson dies and as a result of the inquiries made by the accountant for the executor, the following facts appear with respect to the financial affairs and accounts of the Nob Hill Realty Company:

It has been the practice of the directors to buy bonds after the close of each fiscal year. The books are in balance, but the total cost of the investment is not recorded and no entries appear with respect to the park fund for permanent maintenance from which the bonds were to be purchased.

The tract consists of 400 lots of different sizes, but all of the same selling price. On February 28, 1922, 40 lots are left unsold, sales of which will probably be consummated during the spring and summer of 1922.

Cash dividends have been declared and paid, but nobody appears to know what portion of dividends was earned, and what portion represents liquidating dividends, if any. The accountant draws off two trial balances, as follows:

TRIAL BALANCES

	March 1, 1916	February 28, 1922
Debits:		
Cash on Hand	$ 16,000.00	$ 252,000.00
Bonds	....	100,000.00
Real Estate	120,000.00	120,000.00
Improvements	160,000.00	160,000.00
Improvements Replaced	60,000.00	60,000.00
General Expense	24,000.00	84,000.00
Park and Driveway Maintenance	....	36,000.00
Dividends Paid	....	430,000.00
	$380,000.00	$1,242,000.00

	March 1, 1916	February 28, 1922
Credits:		
Capital Stock..................	$300,000.00	$ 300,000.00
Sale of Lots....................	....	900,000.00
Bond Interest..................	....	12,000.00
Interest (on call loans)..........	30,000.00	30,000.00
Mortgage....................	50,000.00	....
	$380,000.00	$1,242,000.00

From the foregoing data prepare journal entries, Profit and Loss account for the period, and balance sheet as of February 28, 1922.

2. On January 1 the Fairview Real Estate Association was incorporated, the capital subscribed and paid in being $30,000, divided into 30 shares. The association purchased improved property for speculative purposes, paying cash $30,000 and giving a first mortgage for $60,000 at 6%.

The association organizes and incorporates on the same day the Fairview Club with 30 proprietary members (being the stockholders of the real estate association) and 30 associate members, who have no proprietary interest but enjoy all the privileges without incurring all the liabilities. The annual fees are $100 a year, paid by all in advance.

The association leases to the club the property aforesaid, the consideration being, in lieu of rent, the payment by the club of all sums for taxes, betterments, interest, fixtures, furniture, etc.

The proprietary members are assessed $300 each and by a subsequent resolution of the association are to receive credit therefor with interest at 6%. Five members fail to pay the assessment.

The association having executed a contract for the sale of the property for $110,000, the club disbands at the end of the year.

The club expenditures for the year are as follows: taxes $1,800; interest on mortgage $3,600; repairs $1,000; improvements $3,000; furniture and fixtures $2,000; general expenses $500; help (sundry employees) $1,600.

There are house charges against the members $500 in amount, which are subsequently collected; and there are payable book debts of $4,000. A second assessment of $100, called for to pay off the club debts, is paid by the proprietary members of the association.

Frame journal entries, raise and close accounts on the association and the club books, and prepare balance sheet and revenue account for each.

3. The Fairview Cemetery Association, a corporation, has as one of its by-laws the provision that "the sum of $2,500 shall be paid out of the gross

profits, annually, to the Guaranty Trust Company, Trustee, for the purpose of creating an endowment fund, the income from which is to be used for the perpetual care of the cemetery, after the company shall cease to exist; and further that in the year 1968 said endowment fund shall be paid over to the city, with the provision that the income thereof shall be used in maintaining the cemetery as a park."

In accordance with the above, the Fairview Cemetery Association pays over to the Guaranty Trust Company, on December 31, 1920, the sum of $2,500.

June 30, 1921, is the end of the first fiscal year of the association, and the books are to be closed as of that date. The trial balance of their books is as follows:

Debits

Land	$ 80,000.00
Accounts Receivable	4,260.00
Cash in Office and Banks	12,759.60
Upkeep of Cemetery	16,540.00
Office Expenses	1,950.00
Improvements	23,150.00
Lots in Other Cemeteries	440.40
Endowment Fund (referred to above)	2,500.00
Total	$141,600.00

Credits

Capital Stock	$100,000.00
Sales of Lots	32,450.00
Notes Payable	5,000.00
Accounts Payable	1,450.00
Income from Interments	2,140.00
Miscellaneous Income	560.00
Total	$141,600.00

It is stated that under our statute, sale of lots can be treated as "profits" and the company avails itself of this in closing their books.

Under date of June 30, 1921, the Guaranty Trust Company makes the following report as to the endowment:

1. That they have received the $2,500.
2. That on January 15, 1921, they have purchased two $1,000 bonds at par and accrued interest. Rate of interest is 5%, payable June and November of each year.
3. That they have collected $50 interest on June 1, 1921.

4. That they have allowed 3% interest per annum, computed semi-annually, on lowest amount of cash in fund during period.

They show the cash in fund, which you are asked to compute from the above to verify the correctness of their balance.

(a) Make necessary journal entries to close the books for the fiscal year.

(b) Construct income and expense accounts for the year.

(c) Construct balance sheet as on June 30, 1921.

(d) Prepare such accounts as in your opinion are necessary to show the full status of the endowment fund, to be kept on the books of the association.

4. As on January 1, 1907, a corporation is formed for the purpose of acquiring and conducting a cemetery, and starts business on that date with a capital stock of $100,000 paid for in cash. The company first purchases 40 acres of land within easy access of a large city, paying for same at the rate of $1,000 per acre. It proceeds to expend considerable sums of money in the purchase and planting of trees and shrubs, laying out drives and pathways, sodding, building of glass houses, etc. The policy of the company is to withhold the selling of burial lots until after January 1, 1917, so as to allow the trees and shrubs to become more fully grown and in the expectation that with the growth of the city their property will become more valuable. In the year 1917 the company commences selling burial lots, and all lots are sold under a special provision whereby the company agrees to apply 50% of all cash received on sales in the purchase of 4% bonds until a total of $150,000 of such bonds shall have been so purchased. The agreement further provides that after all the lots have been sold the company will wind up its affairs and the above bonds, amounting to $150,000, shall be given to the city, which shall use the income of such bonds for keeping up the cemetery. It is the custom of the company not to purchase bonds until after the close of each fiscal year, and after the total sales of that year have been determined.

March, 1922, the directors of the company find that, while they believe the books to be in balance, no proper entries have been recorded showing the total cost of their investment, and that no entries have been made with respect to the fund of $150,000 from which said bonds are to be purchased. While cash dividends have been declared and paid, the directors are in ignorance of what their profits actually have been, and how much of the dividends so received have been out of their profits and how much in the nature of liquidating dividends, representing a return of their original investment. They therefore employ a certified public accountant to determine all these matters and to make the necessary entries on their books and render a report to them. After determining the clerical accuracy of the

books the accountant draws off the two trial balances given below, and from them prepares the necessary entries and obtains the information required by the directors.

TRIAL BALANCE

Debits

	January 1, 1917	January 1, 1922
Real Estate	$ 40,000.00	$ 40,000.00
Improvements	45,000.00	45,000.00
Bonds	....	125,000.00
Administration Expense	20,000.00	46,000.00
Upkeep of Cemetery	....	45,000.00
Dividends paid	....	130,000.00
Cash	7,000.00	40,800.00
	$112,000.00	$471,800.00

Credits

Interest account representing interest at 4% on unexpended cash during development period	$ 12,000.00	$ 12,000.00
Bond interest account	....	9,800.00
Sale of lots	....	350,000.00
Capital Stock	100,000.00	100,000.00
	$112,000.00	$471,800.00

An inventory of their unsold lots as on January 1, 1922, shows that they have 10 acres left unsold of equally desirable character with that already sold. Draw up entries, prepare Profit and Loss account for period and balance sheet as on January 1, 1922, in same manner as if you had been the accountant engaged. In any interest calculation use 4 % simple interest.

XI

1. By the terms of a sinking fund agreement the Southwestern Trust Company as trustee of the bond issue collects from the Susquehanna Railway Company, semiannually, on the first day of January and July, the interest on the bonds in the sinking fund, together with the sinking fund payment.

If it cannot purchase sufficient bonds at par and accrued interest in the open market to absorb the moneys in the sinking fund, it draws sufficient bonds by lot, 10 days prior to February 1 and August 1 of each year at par flat so as to invest all of the moneys in its hands.

The interest on these drawn bonds ceases to the public on the first coupon date after they are drawn.

The bonds are held alive in the sinking fund and interest on them is collected by the trustee and is used with the semiannual sinking fund payments to retire additional bonds.

The first statement of account is that rendered by the trustee to the assistant treasurer of the railway company, who checks it up and renders the second statement of account to the treasurer of the railway company to be taken into the accounts.

Reconcile the two statements of account, which are as follows:

Susquehanna Railway Company
In Account With

The Southwestern Trust Company, Trustee, under Sinking
Fund Agreement dated January 1, 1886, for Northern
Division 4% Bonds maturing 1936

Debit

1921				
Jan.	15	Bought $10,000 Northern Division 4% bonds at 99 1/2	$9,950.00	
		Accrued Interest	182.22	$ 10,132.22
	26	Paid $100 drawn bond and coupon		102.00
Feb.	1	Paid $95,100 drawn bonds and coupons		95,202.00
	2	Paid $10,000 drawn bonds		10,000.00
	4	Paid $2,200 drawn bonds and coupons		2,202.00
	5	Paid Balance		12,796.06
				$130,434.28

Credit

1920			
Dec.	31	Balance as per account rendered	$ 3,540.28
1921			
Jan.	1	Received semiannual payment to the sinking fund	40,000.00
	1	Collected 6 months' interest to February 1, 1921, on $4,329,500 Northern Division 4% bonds	86,590.00
	27	Collected coupon paid with drawn bond	2.00
Feb.	1	Collected 6 months' interest to date on $10,000 Northern Division 4% bonds purchased in January	200.00
	3	Collected coupons paid with drawn bonds	102.00
			$130,434.28
Feb.	5	Balance	$ 12,796.06

Bonds drawn but not yet presented for payment:

No. 0286 for \$1,000 and Nos. 016, 0288, 0354 for \$100 each, on which interest ceased February 1, 1920.

Nos. 0259, 0456 for \$1,000 each, and No. 07 for \$100, on which interest ceased August 1, 1920.

Nos. 038, 096, 0102, 0157, 0966, 0988, 01655, 04299, 04300, for \$1,000 each, and Nos. 015, 019, 026, 0100, for \$100 each, on which interest ceased February 1, 1921.

The Southwestern Trust Company, Trustee, under Sinking Fund Agreement dated January 1, 1886, for Northern Division 4% Bonds maturing 1936
In Account With
Susquehanna Railway Company

Debit

1920			
Dec. 31	Balance as per account rendered		\$ 66.28
1921			
Jan. 1	Paid semiannual payment to sinking fund		40,000.00
1	6 months' interest to February 1, 1921, on \$4,332,900 Northern Division 4% bonds		86,658.00
Feb. 1	Paid 6 months' interest to date on bonds purchased in January		200.00
			\$126,924.28
Feb. 5	Balance		\$92.06

Credit

1921			
Jan. 15	Bought \$10,000 Northern Division 4% bonds at 99 1/2	\$9,950.00	
	Accrued Interest	182.22	\$ 10,132.22
Feb. 1	\$116,700 Northern Division bonds drawn for payment this day at par		116,700.00
5	Balance		92.06
			\$126,924.28

Sinking Fund Bonds
\$4,459,600 Northern Division 4% Bonds

2. The books of the X Manufacturing Company were audited to December 31, 1920, and in making up the balance sheet and the profit and loss account at that date the auditors recommended the following adjustments:

1. Transferred to Profit and Loss, $4,231.07, which had been charged to real estate and buildings in error.
2. Provided for depreciation of buildings, etc., $7,200.
3. Adjusted salaries amounting to $1,400, due for 1920 services but not entered on the books until January, 1921.
4. Reduced the amount of inventory because of errors, $12,000.

The same auditors were again called in to audit the books to June 30, 1921, and found that the above adjustments had not been entered in the books. They also found that during the half-year $1,000 had been charged to real estate, buildings, etc., instead of to expense; that no provision had been made for depreciation for the period, amounting to $3,600, and that the inventory had been footed $10,000 too much. Also that the unexpired insurance amounted to $750 more than was entered on the books.

The following are condensed trial balances of the X Manufacturing Company books as the auditor found them as of December 31, 1920, and June 30, 1921:

	December 31, 1920		June 30, 1921	
Real Estate, Buildings, etc.	$102,840.26	....	$115,226.80	....
Capital Stock............	....	$200,000.00	....	$200,000.00
Debentures.............	....	100,000.00	....	100,000.00
Cash..................	14,672.14	....	22,143.21	....
Accounts Payable.........	....	9,431.17	....	11,698.21
Accounts Receivable.......	22,436.10	....	28,250.40	....
Loans..................	....	10,000.00	....	5,000.00
Stocks and Bonds.........	17,502.50	....	19,150.00	....
Inventory...............	246,153.42	....	288,360.14	....
Unexpired Insurance.......	1,471.23	....	742.26	....
Surplus.................	....	85,644.48	....	85,644.48
Profit and Loss, 1921......	....	....	....	71,530.12
	$405,075.65	$405,075.65	$473,872.81	$473,872.81

From the above facts prepare:

(a) A correct balance sheet, June 30, 1921.

(b) State the adjusted amount of profits for the half-year to June 30, 1921.

(c) Prepare statement reconciling the balance sheet figures with the original trial balance of June 30, 1921.

3. The condition of the Atlantic Company at the close of business December 31, 19—, is reported by them as follows:

Assets

Real Estate	$ 150,000.00
Machinery	200,000.00
Cash	24,500.40
Accounts Receivable	320,800.50
Merchandise	375,480.70
	$1,070,781.60

Liabilities

Capital Stock	$ 500,000.00
Mortgage on Real Estate	100,000.00
Accounts Payable	67,000.00
Surplus	200,000.00
Notes Payable	100,000.00
Profit and Loss	103,781.60
	$1,070,781.60

The company has a branch to which it sells its goods at 20% over inventory prices, and carries this account together with other branch assets as a receivable.

The statement of the branch on the date, December 31, 19—, was:

Assets

Fixtures	$ 6,205.79
Cash	1,107.55
Accounts Receivable	12,478.14
Merchandise at price billed to branch	5,241.95
	$25,033.43

Liabilities

Atlantic Company	$25,033.43

(a) What was the inventoried value of the branch merchandise?

(b) Prepare a corrected statement of the Atlantic Company.

XII

1. A, the party of the first part, enters March 1 on the performance of a contract for $50,000, payable in two instalments of $25,000 each, the first of which is due on completion of a specific part of the work but subject to 10% being retained by the party of the second part as security for the continuation of the undertaking; the second instalment, together with

the security retained as aforesaid, is to be paid on final acceptance of the completed work.

A has a capital of $4,000 available for payment of labor, which proves insufficient. He therefore takes in as associates, on April 1, B, who contributes $3,000 and C, who contributes $1,000. B and C are to share profits in the proportions of 3/8 and 1/8 respectively, and to receive interest on capital at 6% per annum.

The first instalment on the contract falls due and is paid on May 1, at which date $7,502 has been expended by the contractors for labor and incidentals, and obligations for materials and supplies furnished on credit have been incurred and are outstanding to the amount of $13,900, of which all but $1,500 are forthwith settled from the instalment money.

On receipt of the first instalment, B and C withdraw their capital and realize the profits earned at the completion of the first stage of the work, leaving A to continue alone, it being carefully estimated and mutually conceded that a further outlay of $26,158 will be sufficient to finish the work and cover all reasonable contingencies.

Show by skeleton ledger accounts the cash payable by A to B and C respectively on their withdrawal from the partnership, and state the resources and obligations that remain to A on entering on the second part of the work.

2.

TRIAL BALANCE OF THE GENERAL LEDGER OF JOHN DOE, CIVIL ENGINEER

At December 31, 19—

Cash	$10,572.44	Manhattan Construction	$ 5,000.00
Furniture and Fixtures	1,054.68	Report #1, Swanee Creek Railroad	5,300.00
Real Estate (Rutherford Home)	6,000.00	Report #2, Englewood Reservoir	4,500.00
Investments in Stocks	15,457.50	Report #3, Long Acre Library	3,200.00
Investments in Bonds	3,000.00	Connecticut Tramways Company 1	1,950.00
Missouri Pacific Margin Account	13,000.00	Earnings—Consulting	2,000.00
Accounts Receivable	15,361.32	Report Fees	16,000.00
General Expense	9,800.00	Sharp and Company Brokers	11,310.00
Interest	1,060.00	Stocks and Bonds	4,300.00
		Capital	21,745.94
	$75,305.94		$75,305.94

Analyses

General Expense: Salaries: John Doe $6,000, other salaries $1,800; rent $1,000; advertising $600; cables and telegrams $90; stationery and printing $110; other expenses $200.

Interest: Debited with $1,300 charged by Sharp and Company, brokers, on margin account; reduced by dividends of $390, credited by Sharp and Company on margin account. Balance on loans since repaid.

Manhattan Construction Company: Represents consulting fees received during the year 19—, the contract running from month to month, with no expense to John Doe.

Reports 1–3: Are completed and delivered. Account contains fees less expenses.

Connecticut Tramways Company: Represents $2,000 received November 1, 19—, and expenses of $50; according to terms of contract John Doe is to act as consulting engineer for 10 months and to receive altogether $5,000.

Report Fees: Fees received under contract for report, of which $9,000 has been received on contracts on which no work has been done; balance is earned.

Stocks and Bonds: Are sold. Account represents balance.

Additional Facts: Dividends on stocks received during the year amount to $1,985, of which $1,000 has been applied to the account, Investment Stocks, and $985 to Stock and Bonds Sold.

Prepare:

(a) Balance sheet at December 31, 19—, with your certificate attached.

(b) Income statement showing John Doe's true earning power as a civil engineer.

3. A corporation with a balance sheet as at December 31, 1921, given below, is placed in charge of a receiver.

Assets		*Liabilities*	
Cash	$ 12,188.00	Accounts Payable	$ 62,060.00
Accounts Receivable	71,227.00	Notes Payable	60,000.00
Investments	13,950.00	Capital Stock	50,000.00
Fixtures	46,880.00	Surplus	55,497.00
Inventory	83,312.00		
	$227,557.00		$227,557.00

An examination of the books discloses the following: The cash consists of deposit in bank $10,550; currency $595; advanced on traveling expenses $250; sundry expense vouchers $793.

Accounts receivable are as follows:

Contracted in 1921	$51,822,	estimated to shrink	$500
" " 1920	5,715,	" " "	25%
" " 1919	3,180,	" " "	75%
" prior to 1919	10,510,	all bad	

The investments are considered to be of no value. The inventories are found to contain unsalable stock to the amount of $7,525.

The fixtures have been bought as follows:

In 1914	$ 5,115.00
1915	3,002.00
1916	2,150.00
1917	17,810.00
1918	1,005.00
1919	4,505.00
1920	6,115.00
1921	7,178.00
	$46,880.00

Fixtures are estimated to last 10 years, and no depreciation has been entered in the accounts. Bills for goods received amounting to $3,512 have not been included in the accounts payable of $62,060.

The receiver decides to reorganize the business with a capital stock of $150,000, divided as follows: $75,000 common, and $75,000 6% preferred. He offers the creditors 75% of their claims in preferred and 25% in common stock, with a bonus of 25% common. This is accepted by creditors holding $60,000 worth of notes, and $40,000 of claims on open accounts. He offers the stockholders in the old corporation one share of common stock in the new corporation for every two shares in the old corporation. This is accepted by all of them. He estimates that the new corporation can do a business of $700,000 a year with the goods costing 70%, that his expenses will be $175,000, that he will allow ¼% for bad bills and a depreciation charge of 10% on the cost of fixtures.

Submit an adjusted balance sheet of the new corporation, and an estimated operating account for the first year, showing the estimated percentage to be earned on the common stock, after paying dividends on the preferred.

XIII

1. The books of a manufacturing concern, operating under a system of cost accounts, show the following conditions at the opening of the fiscal year: Raw materials in storeroom $15,621.42; factory pay-roll, applied

and distributed but not paid, 2 days, $831.78; partly manufactured goods, at prime cost $63,888.44, and the further value of $8,037.17 to cover factory burden; also $12,074.92 to cover management charges; finished wares in stock at total cost of $21,656.01.

The financial operations during the ensuing year include: purchases of raw materials $80,416.45; factory pay-rolls $125,793.90; factory expense, including wages not applied to cost accounts, $24,846; management expenses $38,100; interest paid on loans $1,200; income from investments $5,004.

The manufacturing operations during the same year comprehend raw materials issued on requisition for consumption $79,820.34; wages applied and distributed to manufacturing cost $120,250.40, and to factory expenses $5,959.39 included in the sum stated in preceding paragraph.

Finished goods transferred from factory to warerooms, at prime cost, covering materials $78,542.58 and labor $118,333.75. The trading operations during the same year comprehend: cost of goods sold $251,949.90; proceeds from goods sold $302,339.88.

At the close of the year the partly completed goods include in addition to prime cost the further elements of value to cover factory and management expenses in the amounts respectively of $8,439.02 and $12,678.66, and factory pay-roll for 3 days amounting to $1,247.67, which has been applied and distributed though not due till the close of the current week.

The basis of the apportionment of overhead charges is as follows: factory expense, 20% to materials and 80% to labor; management expenses, 30% to materials and 70% to labor.

The transactions of the previous year in round amounts are used in calculating the current year's apportionment, viz., materials $75,000; labor $115,000; factory expense $24,000; management expense $36,000.

Open the general ledger accounts that control the cost accounts; show the operation of each and the resulting net profits; also calculate the percentage to be added to each $1 of material and of labor to give the total cost.

2. The cost books of factory A, the product of which is charged to the main office of the X Y Z Company, at factory cost, show the following facts January 1, 19—.

Cash (imprest fund) $500; raw materials $17,688.51; wages unpaid and distributed $2,348.67; goods in process, at prime cost, $62,258.61, plus $11,352.75 for general expenses and $9,007.50 for management charges; finished goods $45,290.20.

The invoices for purchases of raw materials for the year amount to $78,375.65; wages paid are $133,041.27; management charges $53,695;

factory expenses $36,967.08. The cash receipts for one year's rent of loft are $1,200, and for 11 months' sale of power $330, the twelfth month being unpaid.

The raw materials consumed during the period amount to $64,188.33; management charges distributed, to $55,761.90; factory expenses distributed to costs, to $43,033.23. There is also a loss on machinery replacements of $107.50.

The finished product output for the year amounts to $324,583.43, including all costs; and the transfers to the main office are $338,297.90.

At the close of the period, December 31, 19—, there remains unpaid and undistributed to goods in process the regular factory pay-roll for 3 days amounting to $2,857.93 and also 1,500 hours of operatives' overtime at an average rate of 45 cents per hour, payable on a basis of 2½ hours overtime as the equivalent of 3½ hours regular time.

Raise all the ledger accounts affected and show final trial balance.

3. A contracts with a textile establishment to sell the mill's annual output on the following conditions:

The mill is to bill the output to A at cost. A is to finance the mill to the extent of 75% of cost on receipt of goods. The balance is to be remitted by A as the various shipments are sold, less 5% and advances. At the end of the year an analysis of A's affairs reveals the following, as shown by his books, the goods being sold at 10% profit above factory cost (mill shipments $7,327,918.18):

	Debits	Credits
Mill Advances	$ 5,545,938.00	$ 5,000,000.00
Mill Sales	6,400,000.00	7,840,710.00
Freight and Cartage	90,000.00	80,000.00
Customers	7,840,710.00	7,632,200.00
Cash	7,610,200.00	5,635,938.00
Discounts	22,000.00	
Commission		320,000.00
Mill Account		1,000,000.00
	$27,508,848.00	$27,508,848.00

Prepare A's financial statement.

4. You have been engaged to audit the books and accounts of the X Corporation for the calendar year 19—. The factory and other accounting records are at J; the secretarial records are at K. The company's product is made to order only.

As a result of your audit at J you have prepared the following:

Condensed Profit and Loss Statement

For the Calendar Year 19—

Gross sales (shipments)	$240,000.00
Less: Return sales and allowances	5,000.00
Net sales	$235,000.00
Deduct: Cost of goods sold (shipped)	153,300.00
Gross profit on sales	$ 81,700.00
Deduct: Selling and administrative expense	32,675.00
Net profit on operations	$ 49,025.00
Add: Net financial income	975.00
Net profit for calendar year 19—	$ 50,000.00

Before the final preparation of your report you go to K to examine the minutes of the board of directors. Upon your examination you find in the minutes, under date of March 12, 19—, the following:

> Whereas, Mr. A, our factory superintendent, and Mr. B, our general sales manager, are devoting their entire time and attention to the affairs of the company and by their faithful devotion to its interests have increased the output of the company at the factory and the sales at K; and
>
> Whereas, for this reason it is the sense of the directors that the said Mr. A and Mr. B, in addition to the amount of compensation regularly allowed them, should be further compensated;
>
> Therefore be it resolved that fifty (50) per cent of the net operating profits of the X Company (after charging this additional compensation as an expense) arising from the net shipments over and above one hundred and seventy-five thousand dollars ($175,000) be divided equally between the said Mr. A and Mr. B as their additional compensation for the year.

Recast your profit and loss statement to give effect to the above additional information.

Show your procedure and give proof of your correctness.

XIV

1. Following are the trial balances of Company A and its subsidiaries at December 31, 1920:

Debits

	Company A	Company B	Company C
Cash	$ 75,000.00	$ 50,000.00	$ 60,000.00
Accounts Receivable	350,000.00	190,000.00	420,000.00
Notes Receivable	200,000.00	60,000.00	40,000.00
Inventory, Raw Material, January 1, 1920	150,000.00	105,000.00	160,000.00
Purchases, Raw Materials	650,000.00	400,000.00	510,000.00
Labor	450,000.00	320,000.00	370,000.00
Manufacturing Expenses	190,000.00	190,000.00	205,000.00
Selling Expenses	85,000.00	40,000.00	75,000.00
Administrative Expenses	45,000.00	25,000.00	35,000.00
Inventory, Goods in Process, January 1, 1920	80,000.00	70,000.00	75,000.00
Inventory, Finished Goods January 1, 1920	90,000.00	65,000.00	80,000.00
Plant and Equipment	900,000.00	400,000.00	750,000.00
Investment in Stock of Company B	875,000.00	....	....
Investment in Stock of Company C	1,200,000.00	....	....
	$5,340,000.00	$1,915,000.00	$2,780,000.00

Credits

	Company A	Company B	Company C
Capital Stock	$3,000,000.00	$ 500,000.00	$ 800,000.00
Notes Payable	110,000.00	80,000.00	60,000.00
Accounts Payable	100,000.00	65,000.00	250,000.00
Bonds Payable	500,000.00	....	....
Premium on Bonds	5,000.00	....	....
Reserve for Depreciation	100,000.00	60,000.00	112,500.00
Sales	1,400,000.00	1,050,000.00	1,250,000.00
Surplus	125,000.00	160,000.00	307,500.00
	$5,340,000.00	$1,915,000.00	$2,780,000.00

The inventories at December 31, 1920, were:

	Company A	Company B	Company C
Raw Material	$280,000.00	$175,000.00	$210,000.00
Goods in Process	95,000.00	80,000.00	85,000.00
Finished Goods	135,000.00	145,000.00	105,000.00

Company A purchased the entire stock issues of Companies B and C at January 1, 1920, at the prices shown in the trial balance. During the year each of the three companies declared and paid a 5% dividend. Company A took up its dividends from Companies B and C by credits to surplus. The various entries for the dividends were the only entries affecting the surplus accounts during the year.

At December 31, 1919, Company A's inventory of raw material included goods purchased from Company B at a price of $60,000, the cost thereof to Company B being $40,000.

At the same date Company B's inventory of raw material included goods purchased from Company C for $75,000 on which Company C made a profit of $25,000.

During 1920, Company C sold goods to Company B at a price of $200,000. These goods cost Company C $160,000. Company B still owes $30,000 on these purchases, the indebtedness being included in the accounts payable.

During 1920, Company B sold goods to Company A at a cost of $300,000 and at a selling price of $375,000. Company A made cash advances totaling $400,000 to Company B during the year. The sales just mentioned were charged against the Advances account, the $25,000 balance of which is included in Company B's accounts payable.

The inventories at December 31, 1920, include intercompany profits as follows:

	Raw Material	Goods in Process	Finished Goods
Company A	$20,000.00	$5,000.00	$4,000.00
Company B	30,000.00	6,000.00	5,000.00

Company A's bonds were issued July 1, 1920. They bear 5% interest, which is payable semiannually and they mature in 5 years. No interest has been paid.

Allow depreciation at 5% per annum on the cost of the fixed assets.

Prepare the following consolidated statements:

(a) Cost of goods manufactured and sold.
(b) Profit and loss statement.
(c) Surplus statement (showing as the final balance therein the surplus balance appearing in the consolidated balance sheet).
(d) Balance sheet.

2. The balance sheets of companies A, B, and C are as follows:

Balance Sheet of A

Property Leases and Good-Will........	$ 470,133.00	Capital Stock.......	$ 400,000.00
Fixtures............	81,791.00	Bonds..............	100,000.00
Merchandise Inventory.............	126,538.00	Sundry Creditors....	59,975.00
Sundry Debtors.....	54,642.00	Surplus.............	135,886.00
Sinking Fund Assets.	11,690.00	Pension Fund.......	5,460.00
Cash on Hand......	20,204.00	Sinking Fund.......	11,690.00
		Profit and Loss......	51,987.00
	$ 764,998.00		$ 764,998.00

Balance Sheet of B

Cash...............	$ 51,195.00	Preferred Stock.....	$ 800,000.00
Investments:		Common Stock......	123,000.00
Short-Time Loans	108,000.00	Surplus.............	160,000.00
Stock of A at par...	100,000.00	Accounts Payable....	141,235.00
Stock of C at par..	20,000.00	Notes Payable......	4,728.00
Bonds of Company A at par (cost)..	50,000.00	Profit and Loss......	217,254.00
Railroad and other bonds at present value..........	126,070.00		
Merchandise........	366,437.00		
Sundry Debtors.....	15,563.00		
Prepaid Expense....	12,715.00		
Good-Will and Trade-Marks...........	422,900.00		
Plant and Machinery.	173,337.00		
	$1,446,217.00		$1,446,217.00

Balance Sheet of C

Land and Buildings..	$ 41,438.00	Capital Stock.......	$120,000.00
Machinery..........	20,577.00	Bonds..............	30,675.00
Merchandise........	19,610.00	Surplus.............	34,000.00
Office Furniture.....	50.00	Dividend Declared...	1,650.00
Cash...............	14,730.00	Accounts Payable...	5,879.00
Accounts Receivable.	21,245.00	Profit and Loss......	12,343.00
Good-Will at Cost...	81,867.00		
Bonds of Company A, $5,000 at Cost....	5,030.00		
	$204,547.00		$204,547.00

Company D is organized for the purpose of consolidating the three companies whose balance sheets are given above and which are engaged in allied businesses. It is authorized to issue $2,000,000 preferred stock and $350,000 common stock. It arranges to buy stock of the subsidiary companies on the following terms:

For Each Share of:	Is Offered of D Preferred Stock:	D Common Stock:
A stock	1 share	1/2 share
B preferred	2 shares	
B common		1 share
C stock	1 share	3/4 share

On these terms D acquires $290,000 of A stock, all the preferred stock and $100,000 of the common stock of B, and $100,000 of C stock. The stock bought is obtained from individual holders, the stock of A and C held by B, as well as some stock held by non-consenting stockholders, not being acquired. The remaining preferred stock of D is held by the company. The rest of the common stock authorized is sold for cash at par. The expenses of organization amount to $5,000 and are paid in cash.

Of the accounts receivable held by C, $20,000 are due from B. Of the sundry debtors on the books of B, $5,500 are due from A.

Company D also issues $500,000 bonds which it sells at 105 and pays $500,000 cash for a plant which it buys direct.

Prepare a consolidated balance sheet.

XV

1. From the following three trial balances prepare a consolidated balance sheet as at December 31, 19—, in the form you would draw it up for presentation to the stockholders of the parent company (the Safety Razor Company), showing as separate items therein: (a) the total good-will of the combined companies; and (b) the net profits accruing to the new corporation, viz., to the Safety Razor Company.

Safety Razor Company

Trial Balance at December 31, 19—

	Debits	Credits
Preferred Stock		$1,500,000.00
Common Stock		1,500,000.00
Investments in Subsidiary Companies: 4,000 shares of stock of L. W. Company and 4,000 shares of stock of Steel Blade Company, both of $100 each at cost	$2,500,000.00	

	Debits	Credits
Accounts Payable		20,000.00
Dividends from Subsidiary Companies		100,000.00
Administration Expenses	25,000.00	
L. W. Company Current Account	100,000.00	
Steel Blade Company Advances	150,000.00	
Cash	270,000.00	
Organization Expenses	75,000.00	
	$3,120,000.00	$3,120,000.00

L. W. COMPANY
TRIAL BALANCE AT DECEMBER 31, 19—

	Debits	Credits
Properties and Plant	$ 325,000.00	
Good-Will	250,000.00	
Investment in Steel Blade Company: 2,000 shares of a par value of $100 each, cost $300,000	400,000.00	
Inventories	250,000.00	
Receivables	195,000.00	
Cash	90,000.00	
Capital Stock (4,000 shares)		$ 400,000.00
Accounts Payable		125,000.00
Steel Blade Company		175,000.00
Surplus (includes $100,000 added to book value of investment in Steel Blade Company)		710,000.00
Safety Razor Company		100,000.00
	$1,510,000.00	$1,510,000.00

STEEL BLADE COMPANY
TRIAL BALANCE AT DECEMBER 31, 19—

	Debits	Credits
Good-Will	$ 50,000.00	
Property and Plant	325,000.00	
Inventories	190,000.00	
Receivables, General	105,000.00	
L. W. Company	195,000.00	
Cash	10,000.00	
Capital Stock (6,000 shares)		$600,000.00
Accounts Payable		90,000.00
Safety Razor Company		150,000.00
Surplus or Deficit		35,000.00
	$875,000.00	$875,000.00

In the preparation of your consolidated balance sheet be guided by the following assumed facts:

1. That the Safety Razor Company was formed on March 28, 19—, and acquired its stock ownership in the two subsidiary companies, as shown on its trial balance, on April 1, 19—.
2. That at January 1, 19—, the L. W. Company had a surplus of \$605,000 and the Steel Blade Company a deficit of \$50,000.
3. That no inventory was taken of either the L. W. Company or the Steel Blade Company between January 1 and December 31, 19—, the business of the companies being continued without interruption notwithstanding the change in ownership of the capital stocks as indicated above.
4. That prior to December 31, 19—, the L. W. Company declared a dividend of \$100,000 payable to the parent company, which was duly taken up on the books of both companies, being passed through the current accounts and charged against the surplus of the L. W. Company prior to December 31, 19—.
5. That the difference in the current accounts between the Steel Blade Company and the L. W. Company represented as to \$10,000, merchandise in transit, and as to the remaining \$10,000, a charge for rental of warehouse for the last six months of 19—, which had been credited to the Rent account on the books of the Steel Blade Company.
6. That it was estimated on reliable authority which might be accepted as final, that from January 1 to March 31, 19—, the net profits of the L. W. Company amounted to \$30,000, while during the same period the Steel Blade Company lost \$15,000.

Attach your consolidating working papers to the consolidated balance sheet you prepare.

2. On January 1, 19—, the A B Company owned 90% of the stock of the X Y Company and 80% of that of the P Q Company, two subsidiary companies which it thus controlled, and in fact, actually directed the policy and general administration, the minority holdings in each case being in the hands of the officers and employees of the subsidiary company or of other interests friendly to the A B Company. On June 30, 19—, the holdings in the X Y Company were reduced to 80% by the sale of 100 shares at \$200 per share, to certain employees not theretofore stockholders, while in the case of the P Q Company, owing to the resignation of an officer, his holdings, consisting of 100 shares, were purchased at par, the holdings by the A B Company being thus increased to 90%, so that on December

31, 19—, the proportion of holdings in the two companies was just reversed.

The following are the trial balances of all three companies (after closing) at December 31, 19—:

Trial Balances
At December 31, 19—

Particulars	A B Company		X Y Company		P Q Company	
Properties			$ 85,000.00		$ 75,000.00	
Good-Will	$100,000.00					
Stockholdings:						
In X Y Company:						
800 shares (book value)	*115,000.00					
In P Q Company:						
900 shares at cost	82,000.00					
Current Assets	132,000.00		135,000.00		90,000.00	
Capital Stock:						
A B Company, 3,000 shares		$300,000.00				
X Y Company, 1,000 shares				$100,000.00		
P Q Company, 1,000 shares						$100,000.00
Accounts Payable		125,000.00		30,000.00		10,000.00
Surplus at January 1		50,000.00		60,000.00		10,000.00
19— Profits		†44,000.00		45,000.00		35,000.00
Dividends Paid in December, 19—	30,000.00		40,000.00		25,000.00	
Current Accounts	60,000.00			25,000.00		35,000.00
	$519,000.00	$519,000.00	$260,000.00	$260,000.00	$190,000.00	$190,000.00

* After crediting the proceeds of the 100 shares sold, prior to which the investment had been valued at cost.

† Dividends received from subsidiary companies, less expenses of parent company.

Prepare consolidated balance sheet, showing:

(a) The liability to the minority stockholders in respect to their equity.

(b) The proportion of surplus and profits appertaining to the stockholders of the A B Company.

(c) The good-will of the combined companies.

Assume that the profits earned by the X Y Company and P Q Company, respectively, to June 30, 19—, were exactly 50% of the profits for the complete year.

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